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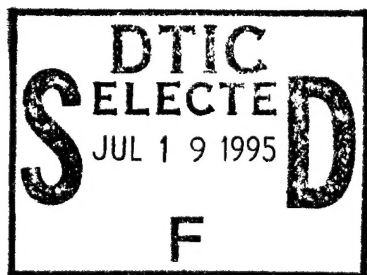
TECHNICAL REPORT  
NATICK/TR-95/027

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# **COOKS' OPINIONS OF THE ARMED FORCES RECIPE SERVICE**

by

**Robert A. Kluter and Larry L. Leshner**



June 1995

Final Report

May 1994 - March 1995

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13. ABSTRACT (Maximum 200 words)  To provide feedback to the Armed Forces Recipe Service (AFRS) on service to its customers, a questionnaire was designed and administered to 642 military cooks at 19 CONUS and OCONUS sites, including three ships at sea. All four DOD Services participated. Visits were made to one site each for the Army, Marines and Navy to obtain filled-in questionnaires. For all other sites, survey questionnaires were sent and returned by mail. Among the findings were: (1) an apparent lag in adopting the latest version of the recipe cards (REVISION) by the Army and marines; (2) no serious difficulties in using and maintaining the recipe card file except for moisture damage to cards when using them during recipe preparation; (3) a substantial proportion of the cooks considered fat levels too high and seasoning/spicing too low; (4) although discussion groups suggested yields were a problem for cooks, site visits revealed some of the reasons may be procedural or due to procurement problems, not inaccuracies on the cards; (5) a high percentage of cooks recommended the deletion of a small number of recipes from the file because of low customer acceptance. In general, findings indicated that AFRS is serving its customers effectively.				
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## PREFACE

This survey was conducted to provide the Armed Forces Recipe Service (AFRS) feedback on the effectiveness of its services to cooks in the four DOD Services.

The effort was titled Advanced Food Equipment and Automation for the Armed Forces Recipe Service under Requirement No. NAAFM 96-15.

The author gratefully acknowledges the assistance of the following individuals: MSG Michael C. Natale, Food Advisor and Mr. Anthony G. Lee, Food Technologist, both of the Engineering Support Branch, Ration Systems Division, Sustainability Directorate, for assistance in data collection during site visits at Army, Navy and Marine Corps facilities; Ms. Ruth Roth, Consumer Research Branch, Behavioral Sciences Division, Science & Technology Directorate for processing and optically scanning the nearly 600 questionnaires collected; Ms. Ellen Basset, GEO Centers, Inc., for processing and scanning questionnaires and particularly for her creative efforts in processing and formatting the written responses from Questions 13, 14 and 15.

This report covers the period May through December 1994.

## INTRODUCTION

The survey of military cooks reported herein was an initial step in a multiphase program titled Advanced Food Equipment and Automation of the Armed Forces Recipe Service (AFRS). The program consists of two major requirements:

1. To bring AFRS recipes up to the state-of-the-art by (a) accommodating new labor saving equipment and reduced numbers of cooks; (b) taking advantage of new ingredients and new food items; and (c) meeting nutritional requirements and changing consumer preferences and demands for menu variety.
2. To automate the AFRS process, including (a) recipe development - formulation, nutrient analysis and testing and (b) a four Services automated system for recipe approval, publication and dissemination.

The purposes of the survey were (1) to determine the pre-automation effectiveness of AFRS in meeting the needs of cooks in the four Services, and (2) to identify problems that need to be addressed in developing an automated recipe system. Although individual Services may have previously conducted surveys of their cooks, this is the first effort by the U.S. Army Natick Research, Development and Engineering Center to survey the cooks of all Services concerning the Armed Forces Recipe Service.

## METHODS & PROCEDURES

Development of the Questionnaire. The questionnaire was developed in four stages: (1) Ration Design Division/Experimental Kitchens personnel and contractors with military food service experience were consulted about issues pertaining to the effectiveness with which the Armed Forces Recipe Service (AFRS) meets the requirements of military dining facility cooks; (2) based on this information and ideas from brainstorming sessions, a list of potential questions was developed; feedback was solicited from Ration Design personnel, military cooks and Consumer Research Branch psychologists and sociologists; (3) inappropriate queries were eliminated; (4) questions were then classified into related and logical response formats; and (5) the questionnaire was prepared and reproduced on Survey Network<sup>®</sup> bubble paper.

As will be noted in the questionnaire (Appendix G), the first page asked for salient demographic characteristics deemed appropriate to describe the sample of cooks in the four DOD Services. Characteristics included were Service, grade, gender, educational level and military culinary training.

The question/issues lists were categorized into four multiple part questions: (1) Number 8, to assess the ease or difficulty of various activities associated with retrieving, replacing and maintaining the card file as well using the recipes; (2) Number 9, to rate various features of the card file and the recipes themselves in terms of not enough versus too much; (3) Number 10, to rate various features of recipe card as poor or good; and (4) Number 12, various agree-disagree statements about AFRS and recipe cards. In Questions 11, 13, 14, 15 and 17 respondents could, respectively, recommend changes in recipe cards, list as many as six problem recipes and the nature of the problem, list up to six recipes they felt should be added to the recipe file and list up to six recipes they felt should be dropped from the recipe file and, finally, make any other comments. Question 16 was a list of 10 cooking appliances, to determine the state-of-the-art of equipment in respondents' facilities.

Administration of the questionnaire. The Office of the Assistant Secretary of Defense requested each of the four services to appoint one site for a survey visit and up to three others to be surveyed by mail. One site visit was accomplished for the Army, Marines and Navy. However, since Air Force sites had few cooks (30 or less) per site, it was not deemed cost effective to visit one of them. Thus, Air Force surveying was accomplished by mail. It was planned to collect approximately 200 completed questionnaires per Service.

During site visits, respondents gathered in auditoria or classrooms and were issued questionnaires and number 2 pencils. Before being allowed to begin filling out the questionnaire, they were briefed orally (see Appendix A) even though written instructions were provided on questionnaires. This assured that

everyone had heard the instructions, if they had not read them. Typically, respondents required 20 to 30 minutes to complete the questionnaire.

For mail surveys, the Point of Contact (POC) named by the Service, which in all instances was the Food Service Officer or Noncommissioned Officer, was telephoned to advise of the site's appointment for the survey and to request cooperation. Then a "survey kit" (see Appendix B) was sent by USPS Priority Mail. It consisted of (1) the required number of questionnaires and Number 2 pencils, (2) a cover letter to the POC, (3) an instruction sheet to assist the POC in administering the questionnaires and (4) an addressed, postage-paid Priority Mail envelope for returning the questionnaires to Natick. The sites selected by each Service, numbers of questionnaires collected and data collection method are listed in Table 1.

**Table 1. Numbers of Surveys Collected, All Sites**

SERVICE	SITE	No. <sup>a</sup>	Method
ARMY	Camp Zama, Japan	29	Mail
	Ft. Campbell, KY	42	Visit
	Ft. Lee, VA	119	Visit
	Ft. Sherman, Panama	7	Mail
	UN Command Security Force, Korea <sup>b</sup>	-	Mail
AIR FORCE	Davis Monthan AFB, AZ <sup>b</sup>	-	Mail
	Grand Forks AFB, ND	12	Mail
	Kadena AFB, Okinawa	7	Mail
	Kirtland AFB, NM <sup>b</sup>	-	Mail
	Langley AFB, VA	31	Mail
	Mountain Home AFB, ID	19	Mail
MARINES	Camp LeJeune, NC	114	Visit
	Camp Geiger, NC	77	Visit
NAVY	Naval Station, Annapolis, MD	10	Mail
	Naval Training Center, Great Lakes, IL	68	Mail
	Submarine Base, Groton, CT	30	Visit
	USS Briscoe (Destroyer)	12	Mail
	USS George Washington (AC Carrier)	59	Mail
	USS Norfolk (Submarine)	6	Mail

<sup>a</sup> Number of questionnaires collected; <sup>b</sup> Nonresponsive; <sup>c</sup> Total = 642

## RESULTS AND DISCUSSION

Mail surveying was successful, resulting in an 80% return rate. Of those sites returning questionnaires, the majority returned the expected number. The following numbers of completed questionnaires were collected from both mail surveys and site visits, as classified by Question 1 (Branch of Armed Forces):

Air Force	69
Army	197
Marines	191
<u>Navy</u>	<u>185</u> (77 Afloat)
Total	642

### Demographic Description of Survey Sample

In Table 2, respondents are classified by Service according to grade, gender, educational level and culinary training received from their Service. In this and all subsequent tables, numbers of responses may not add up to the total number of questionnaires collected from each Service because some respondents did not answer a question. The following differences were noted among the Services:

Question 2, Table 2A: *Grade*. Across the four Services, E-5 was the predominant grade due to the high incidence in the Army and Navy, 50 and 35 percent, respectively. Sixty percent of the Army sample was from the Quartermaster School at Ft. Lee where E-4s, E-5s and E-6s were taking advanced culinary and management courses. Predominant grade in the Marines was E-3 where the entire sample was drawn from two operating units on a single base. The Navy sample appeared normally distributed around the E-5 grade, half being drawn from shipboard and half from ashore food service. The Air Force sample was skewed toward the lower grades (E-5 and below), and nearly 20 percent were contract workers.

Question 3, Table 2B: *Gender*. There was considerable difference among the Services in male-female ratios. Female representation among cooks ranged from a high of 32 percent in the Army to 2 percent in the Navy. With respect to the Navy, females have evidently only recently begun to enter food service, whereas the trend for the Army has been underway longer.

Question 4: *Job Title SSI/MOS*. This was a write-in question used as a screening device to validate that cooks had actually filled out the questionnaires. Responses were not tabulated.

Question 5, Table 2C: *Highest level of education completed*. About two-thirds of the Marine and Navy cooks (67 and 62 percent, respectively) reported their highest education level was high school. In the Air Force, about the same proportions of respondents indicated high school (48 percent) and some college (41 percent). Over two-thirds (69 percent) of Army respondents said they had completed some college or a two-year certificate program. Overall, less than two percent of the cooks reported having a culinary or four-year degree.



**Table 2. Responses to Demographic Questions**

**A. Question 2: Grade**

	Frequency (%)											n
	E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	Contract	Other	
Air Force	13.0	10.1	10.1	10.1	24.6	8.7	2.9	1.4	0.0	18.8	0.0	69
Army	0.0	0.0	2.0	12.7	49.7	18.3	6.6	0.0	0.0	10.7	0.0	197
Marines	2.1	17.8	39.3	18.8	12.6	4.2	1.6	1.6	1.0	0.0	1.0	191
Navy	1.1	8.2	14.1	22.8	35.3	15.2	2.2	1.1	0.0	0.0	0.0	184
All Services	2.3	8.7	17.5	17.2	31.8	12.2	3.4	0.9	0.3	5.3	0.3	641

**B. Question 3: Gender**

	Frequency (%)		
	Female	Male	n
Air Force	25.4	74.6	67
Army	32.0	68.0	194
Marines	9.4	90.6	191
Navy	2.2	97.8	185
All Services	15.9	84.1	637

**C. Question 5: Level of Education Completed**

	Frequency (%)						
	H.S.	Some College	2 Yr. Cert.	Culinary Degree	4 Yr. Degree	Other	n
Air Force	47.8	40.6	8.7	2.9	0.0	0.0	69
Army	27.0	56.1	13.3	1.5	2.0	0.0	196
Marines	67.0	28.8	2.6	1.6	0.0	0.0	191
Navy	62.2	28.1	3.8	2.2	3.8	0.0	185
All Services	51.3	38.2	6.9	1.9	1.7	0.0	641

**D. Question 6: Highest Level of Military Culinary/Cook's Training**

	Frequency (%)						n
	3MO31	3MO71	3MO91	AIT	FSM	A School	
Air Force	55.7	34.4	0.0	4.9	1.6	3.3	61

	Frequency (%)					n
	AIT	BNCOC	ANCOC	FSM		
Army	27.2	52.2	17.2	3.3		180

	Frequency (%)						n
	3MO31	BFSC	FSNCO	FSSNCO	SFSC	C School	
Marines	0.5	79.2	10.4	6.0	3.3	0.5	183

	Frequency (%)		
	A School	C School	n
Navy	73.1	26.9	175

**Table 2. List of Abbreviations**

**AIR FORCE**

MO = Mess Officer  
 AIT = Advanced Individual Training  
 FSM = Food Service Manager  
 A School = Navy's Basic Culinary Course

**ARMY**

AIT = Advanced Individual Training  
 BNCOC = Basic Noncommissioned Officer Course  
 ANCOC = Advanced Noncommissioned Officer Course  
 FSM = Food Service Manager

**MARINES**

MO = Mess Officer; Number = Course No.  
 BFSC = Basic Food Service Course  
 FSNCO = Food Service Noncommissioned Officer  
 C School = Navy's Advanced Culinary Course

**NAVY**

A School = Basic Culinary Course  
 C School = Advanced Culinary Course

Question 6, Table 2D: Highest level of culinary/cook's training received. From 52 percent (Army - Basic Non Commissioned Officers' Course - BNCOC) to 79 percent (Marines - Basic Food Service Course - BFSC) had completed their Service's basic cooking course. Eight percent of the Air Force respondents had taken their basic course in an Army or Navy school. Distributions of training levels appeared appropriate to the grade levels reported.

Question 7, Table 3: What REVISION/CHANGE are you now Using in your facility? Question 8. Do you have the separate spiral bound "INDEX OF RECIPES?"

**Table 3. Recipe Cards and Index: A. Card Version in Use; B. Yes, Have Index of Recipes**

A. Version in Use	Service, Percent (%)			
	Air Force n=59	Army n=189	Marines n=179	Navy n=175
No designation	0	1.1	0.6	0.6
CH-1	0	3.7	0	0.6
CH-2	0	2.6	1.1	0
CH-3	1.7	8.5	2.8	3.4
CH-4	27.1	42.3	16.4	14.9
REVISION	45.8	7.4	22.9	41.1
Combination, CH/REV	10.2	11.1	6.1	6.9
Do not know	15.3	23.3	50.3	32.6
<b>B. YES, have INDEX OF RECIPES</b>	<b>82.3</b>	<b>60.5</b>	<b>74.3</b>	<b>71.3</b>

Except for the Army, where CHANGE 4 is the edition most used at present, REVISION is the predominant version. One third of Navy cooks and one half of Marine cooks were not aware of the version in present use. This may mean that one person in a dining facility, perhaps a supervisor, is in charge of the recipe file. With the Army, it appears that cooks have either not been issued and/or have not adopted REVISION. Another possible factor with the Army and the Marines is use of their respective computerized recipe files, which appear not to be labeled with the version designation. A majority of cooks in all Services are aware of having the separate bound spiral Index of Recipes on hand; in this case also, a "no" response may have meant "don't know."

#### Responses to Rating Scale Questions

General. Results of the four rating scale questions are reported in Tables 4, 5, 6 and 7. Frequencies of responses to the five scale categories are reported with the means and standard deviations. In addition to computation of these descriptive data, the study team statistically compared responses to each question part among the four Services using a one-way analysis of variance (ANOVA). In cases where the F-ratio was significant at  $p \leq 0.05$ , a post hoc Student-Newman-Keuls multiple range test was used to determine significant differences between means. All subsequent reference to significant differences will be at this p level.

Question 8, Table 4: *Rate the ease or difficulty of the following activities associated with the card file and recipe cards you have used.* As indicated in Table 4, 60 percent or more of the respondents in all Services rated the first five activities as easy or very easy: finding recipes, using cards printed on both sides, following recipes, understanding the wording and replacing the cards. Another 9 to 25 percent rated the first five activities neither easy nor difficult (referred to as "neither" in Table 4), and 17 percent or less rated them as difficult or very difficult. Statistically significant ( $P \leq 0.05$ ) differences in mean ratings were found among the Services to all but one of the first five items. However because the magnitude of the differences was 0.1-0.3 scalepoint, they may not be of practical significance. Figure 1 presents an overview indicating the similarity in response patterns by cooks of the four Services.

Mean responses approached the neither easy nor difficult category for the last three parts of Question 8: revising/ updating files with new cards, requesting addition or deletion of a recipe and reporting recipe errors. As indicated in Table 4, higher percentages (one third to one half) of the respondents said these activities were neither difficult nor easy than the percentages responding to the first five parts of the question. In addition, greater percentages than responding to the first five parts (12-36 percent) said these three activities were difficult or very difficult. The higher proportions of cooks who were neutral suggest they do not perform the activities of the last three parts themselves, in particular, requesting additions or deletions or reporting errors.

With reference to the last three parts of Question 8, it was evident in postsurvey discussion groups that cooks are reluctant to make suggestions themselves and instead focus on problems with recipes they are currently working with. They seem accustomed to doing what they are told to do and any requests to/communications with the Recipe Service need first to be screened through their own channels.

Question 9, Table 5: *Rate the following features of the card file and recipe cards you have used.* Each of the eight parts are discussed separately. Plots of the mean responses are presented in Figure 2 and indicate generally close agreement among the Services for most parts of the question.

Part a. *Number of recipes in file.* Nearly half (42-51 percent) of the respondents thought the number was "just right." Note that, compared to the Air Force, Navy and Marines, a higher percentage of Army cooks thought there were "not enough" recipes in the file. On the other hand, compared to Air Force and the Army cooks, higher percentages of Navy and Marine cooks thought there were "too many" recipes in the file. Navy and Marine means were significantly higher than the Army mean.

**Table 4.** Responses to question 8: "Rate the ease or difficulty of the following activities associated with the file and recipe cards you have used."

Five Point Scale:	Frequency (%)					n	Mean $\pm$ SD
	Very Difficult	Difficult	Neither	Easy	Very Easy		
	(1)	(2)	(3)	(4)	(5)		
<b>Air Force</b>							
a. Finding recipes	0.0	7.2	24.6	37.7	30.4	69	3.9 $\pm$ 0.9
b. Printed 2 sides	0.0	8.7	14.5	43.5	33.3	69	4.0 $\pm$ 0.9
c. Following	0.0	1.4	14.5	46.4	37.7	69	4.2 $\pm$ 0.7
d. Understand wording	0.0	1.4	8.7	53.6	36.2	69	4.2 $\pm$ 0.7
e. Replacing cards	2.9	5.8	23.2	36.2	31.9	69	3.9 $\pm$ 1.0
f. Updating file	1.4	10.1	49.3	20.3	18.8	69	3.4 $\pm$ 1.0
g. Request add/delete	4.3	15.9	42.0	17.4	20.3	69	3.3 $\pm$ 1.1
h. Reporting errors	4.4	14.7	44.1	13.2	23.5	68	3.4 $\pm$ 1.1
<b>Army</b>							
a. Finding recipes	1.0	9.7	25.1	35.9	28.2	195	3.8 $\pm$ 1.0
b. Printed 2 sides	1.0	8.8	20.6	44.3	25.3	194	3.8 $\pm$ 0.9
c. Following	2.1	3.6	22.2	43.3	28.9	194	3.9 $\pm$ 0.9
d. Understand wording	1.6	5.2	18.7	49.7	24.9	193	3.9 $\pm$ 0.9
e. Replacing cards	3.6	13.0	22.8	37.8	22.8	193	3.6 $\pm$ 1.1
f. Updating file	6.7	14.0	34.7	33.2	11.4	193	3.3 $\pm$ 1.1
g. Request add/delete	13.5	18.1	43.5	18.7	6.2	193	2.9 $\pm$ 1.1
h. Reporting errors	11.9	23.8	39.4	16.6	8.3	193	2.9 $\pm$ 1.1
<b>Marines</b>							
a. Finding recipes	0.5	2.7	16.5	48.9	31.4	188	4.1 $\pm$ 0.8
b. Printed 2 sides	0.5	3.7	17.6	53.2	25.0	188	4.0 $\pm$ 0.8
c. Following	1.6	2.1	17.1	42.8	36.4	187	4.1 $\pm$ 0.9
d. Understand wording	0.0	1.1	21.3	46.3	31.4	188	4.1 $\pm$ 0.8
e. Replacing cards	1.6	8.1	21.5	35.5	33.3	186	3.9 $\pm$ 1.0
f. Updating file	3.8	10.2	39.2	32.8	14.0	186	3.4 $\pm$ 1.0
g. Request add/delete	14.0	19.9	39.8	18.8	7.5	186	2.9 $\pm$ 1.1
h. Reporting errors	10.2	12.4	38.2	26.9	12.4	186	3.2 $\pm$ 1.1
<b>Navy</b>							
a. Finding recipes	1.1	7.7	11.5	46.4	33.3	183	4.0 $\pm$ 0.9
b. Printed 2 sides	0.5	3.3	18.6	41.5	36.1	183	4.1 $\pm$ 0.8
c. Following	0.5	1.6	10.9	48.1	38.8	183	4.2 $\pm$ 0.7
d. Understand wording	0.0	2.7	13.1	47.0	37.2	183	4.2 $\pm$ 0.8
e. Replacing cards	2.8	8.8	24.9	36.5	27.1	181	3.8 $\pm$ 1.0
f. Updating file	6.6	7.7	34.1	34.1	17.6	182	3.5 $\pm$ 1.1
g. Request add/delete	7.7	14.8	48.4	18.1	11.0	182	3.1 $\pm$ 1.0
h. Reporting errors	8.8	13.2	48.4	17.6	12.1	182	3.1 $\pm$ 1.1
<b>All Services</b>							
a. Finding recipes	0.8	6.8	18.6	43.0	30.9	635	4.0 $\pm$ 0.9
b. Printed 2 sides	0.6	5.7	18.5	46.1	29.2	634	4.0 $\pm$ 0.9
c. Following	1.3	2.4	16.6	44.9	34.9	633	4.1 $\pm$ 0.9
d. Understand wording	0.5	2.8	16.7	48.3	31.6	633	4.1 $\pm$ 0.8
e. Replacing cards	2.7	9.5	23.1	36.6	28.1	629	3.8 $\pm$ 1.0
f. Updating file	5.2	10.6	37.5	31.9	14.8	630	3.4 $\pm$ 1.0
g. Request add/delete	11.0	17.5	43.7	18.4	9.5	630	3.0 $\pm$ 1.1
h. Reporting errors	9.7	16.4	42.1	19.6	12.2	629	3.1 $\pm$ 1.1

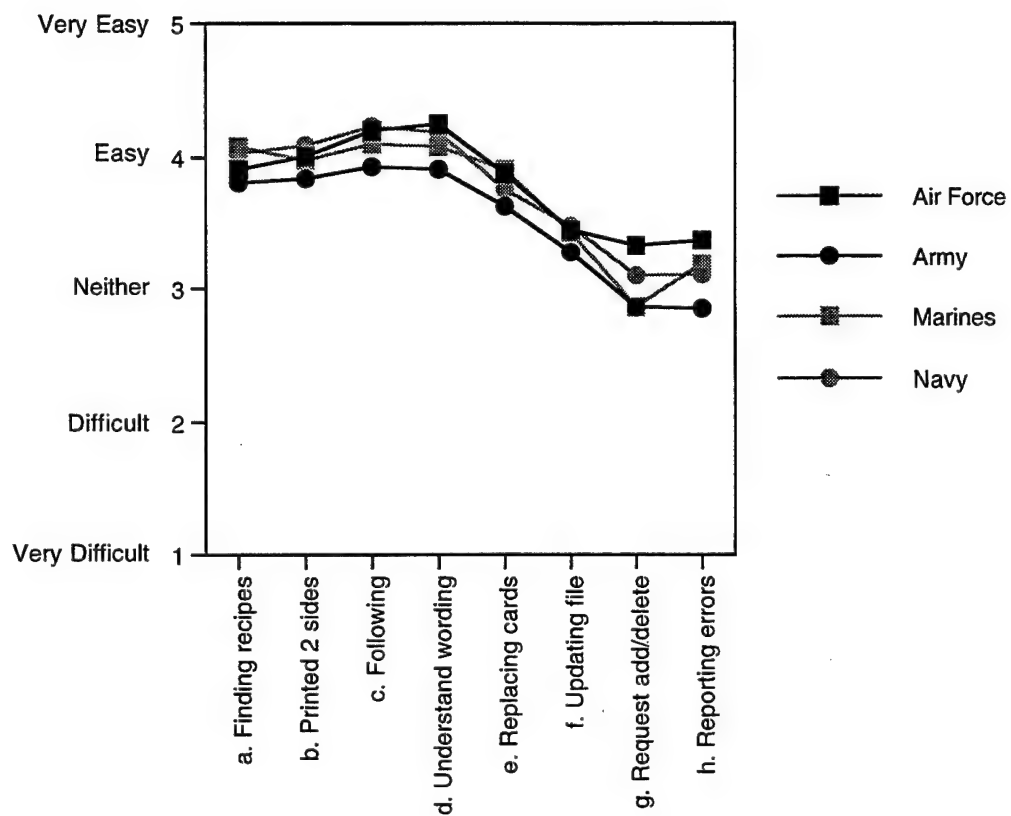


Figure 1. Question 8. Plots of Mean Ratings, Four Services

Part b. *Number of steps.* A majority (60 to 77 percent) of cooks in all Services consider the number of steps in the recipes they have used just right. At the same time, from 17 to 29 percent thought there were too many steps. A minority of respondents (6 to 13 percent) thought there were too few recipe steps. There were no significant differences among the Services.

Part c. *Amount of detail.* A majority (58 to 68 percent) of the cooks thought the amount of detail just right. From 9 to 18 percent thought there was too much detail, and a larger proportion (21 to 32 percent) thought there was not enough detail. Marine responses were significantly different than the Army, but the magnitude of the difference was small (0.3 scalepoint).

Part d. *Seasoning/spicing levels.* Two thirds of the cooks (62 to 68 percent) considered seasoning/spicing levels too low (not enough). Nearly one third thought they were just right, and less than 10% thought them too high (too much). There were no significant differences in this viewpoint among the Services.

Part e. *Fat levels.* Half the cooks (47 to 52 percent) thought that recipe fat levels were just right, while from 30 to 41 percent thought them too high and only 12 to 17 percent thought them too low. There were no significant differences in mean responses among Services.

Part f. *Salt levels.* Half or more (48 to 56 percent) of the cooks thought recipe salt levels just right. Equivalent percentages of Air Force, Army and Navy cooks considered salt levels too low and too high. An exception was the Marines where 37 percent of the respondents thought them too low and only 14 percent too high. Since Marine data were collected from two main sections of one base operated by the same food service office, the response may have reflected opinions concerning a local policy on salt usage in recipes. Marine mean responses were also significantly different than the other Services.

Part g. *Suggested portion sizes.* On average, cooks in all Services considered portion sizes too small (not enough); Army cooks rated portion size significantly smaller than Marine cooks. However, about half the respondents in all Services (46 to 60 percent) thought them just right. The percentage of cooks indicating they thought portion sizes too small ranged from 32 percent for Marines to 48 percent for the Army. Overall, ten percent or less of all cooks thought portion sizes too large.

Part h. *Number of regional/ethnic dishes.* Responses from cooks in all Services clearly indicated there are not enough regional/ethnic recipes. Army cooks' opinions about not having enough of these recipes were significantly stronger than cooks in the other three Services. Although 31 (Army) to 48 percent (Marines) considered the number of such recipes just right, 63 percent of the Army, and 44 percent of the Marine cooks thought there are not enough regional/ethnic recipes.

**Table 5.** Responses to question 9: "Rate the following features of the card file and recipe cards you have used".

	Frequency (%)							
Five Point Scale:	Not Enough		Just Right		Too Much	n	Mean	± SD
	(1)	(2)	(3)	(4)	(5)			
<b>Air Force</b>								
a. Number in file	14.5	13.0	50.7	11.6	10.1	69	2.9 ± 1.1	
b. Number of steps	0.0	5.8	76.8	13.0	4.3	69	3.2 ± 0.6	
c. Amount of detail	7.4	16.2	67.6	5.9	2.9	68	2.8 ± 0.8	
d. Seasoning/spicing	34.8	27.5	29.0	7.2	1.4	69	2.1 ± 1.0	
e. Fat levels	7.2	10.1	52.2	18.8	11.6	69	3.2 ± 1.0	
f. Salt level	10.3	7.4	55.9	19.1	7.4	68	3.1 ± 1.0	
g. Portion sizes	17.4	23.2	49.3	7.2	2.9	69	2.6 ± 1.0	
h. # Ethnic/Regional	29.4	19.1	44.1	4.4	2.9	68	2.3 ± 1.0	
<b>Army</b>								
a. Number in file	23.1	9.2	45.6	10.3	11.8	195	2.8 ± 1.3	
b. Number of steps	2.1	10.9	60.1	17.1	9.8	193	3.2 ± 0.8	
c. Amount of detail	14.5	17.1	58.0	6.2	4.1	193	2.7 ± 0.9	
d. Seasoning/spicing	54.4	13.5	26.4	4.1	1.6	193	1.9 ± 1.1	
e. Fat levels	7.2	7.7	48.2	12.3	24.6	195	3.4 ± 1.2	
f. Salt level	15.7	12.0	51.3	11.0	9.9	191	2.9 ± 1.1	
g. Portion sizes	28.7	19.0	46.2	5.6	0.5	195	2.3 ± 1.0	
h. # Ethnic/Regional	54.1	9.2	31.1	4.1	1.5	196	1.9 ± 1.1	
<b>Marines</b>								
a. Number in file	12.8	8.5	42.0	14.4	22.3	188	3.3 ± 1.3	
b. Number of steps	2.7	4.8	63.1	18.2	11.2	187	3.3 ± 0.8	
c. Amount of detail	9.1	11.8	61.5	10.7	7.0	187	3.0 ± 0.9	
d. Seasoning/spicing	46.2	15.6	31.7	3.2	3.2	186	2.0 ± 1.1	
e. Fat levels	3.3	6.6	50.3	18.0	21.9	183	3.5 ± 1.0	
f. Salt level	21.6	16.2	48.1	5.4	8.6	185	2.6 ± 1.1	
g. Portion sizes	19.6	12.0	59.8	5.4	3.3	184	2.6 ± 1.0	
h. # Ethnic/Regional	30.4	13.6	48.4	3.3	4.3	184	2.4 ± 1.1	
<b>Navy</b>								
a. Number in file	10.9	10.9	44.8	9.3	24.0	183	3.3 ± 1.2	
b. Number of steps	2.2	2.7	71.0	12.0	12.0	183	3.3 ± 0.8	
c. Amount of detail	9.3	12.1	63.2	9.9	5.5	182	2.9 ± 0.9	
d. Seasoning/spicing	48.4	17.6	28.0	4.4	1.6	182	1.9 ± 1.0	
e. Fat levels	6.6	5.5	47.3	17.6	23.1	182	3.5 ± 1.1	
f. Salt level	10.4	12.0	53.6	9.3	14.8	183	3.1 ± 1.1	
g. Portion sizes	28.0	15.4	46.7	7.1	2.7	182	2.4 ± 1.1	
h. # Ethnic/Regional	35.5	17.5	40.4	1.6	4.9	183	2.2 ± 1.1	
<b>All Services</b>								
a. Number in file	15.6	9.9	44.9	11.3	18.3	635	3.1 ± 1.3	
b. Number of steps	2.1	6.2	66.0	15.5	10.3	632	3.3 ± 0.8	
c. Amount of detail	10.6	14.0	61.6	8.6	5.2	630	2.8 ± 0.9	
d. Seasoning/spicing	48.1	16.8	28.7	4.3	2.1	630	2.0 ± 1.1	
e. Fat levels	5.9	7.0	49.0	16.2	21.9	629	3.4 ± 1.1	
f. Salt level	15.3	12.8	51.5	9.7	10.7	627	2.9 ± 1.1	
g. Portion sizes	24.6	16.3	50.6	6.2	2.2	630	2.5 ± 1.0	
h. # Ethnic/Regional	39.1	13.9	40.3	3.2	3.5	631	2.2 ± 1.1	

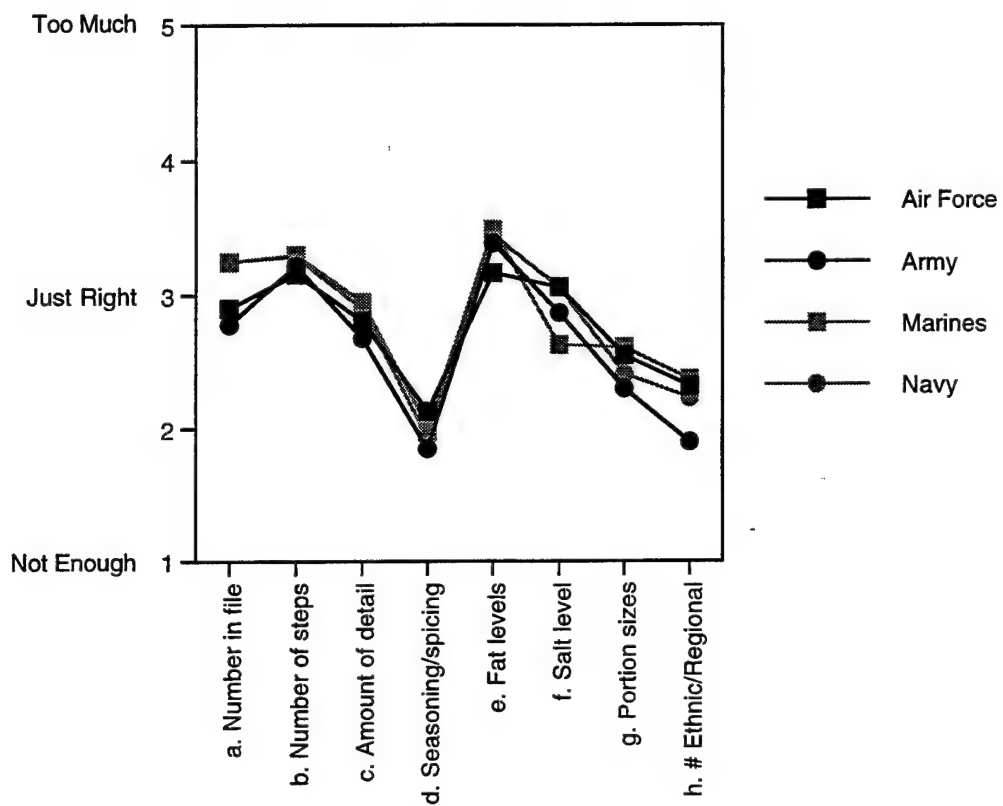


Figure 2. Question 9. Plots of Mean Ratings, Four Services



Question 10, Table 6. *Rate the following features of AFRS recipe cards.* A general idea of response patterns to this question among the Services can be seen in Figure 3; agreement among Services for the part of the question were generally close. Each of the 14 parts of the question are discussed separately.

Part a. *Dimensions of cards.* From 48 to 58 percent of Air Force, Marine and Navy cooks thought the dimensions good or very good; 35 percent of the Army cooks rated this feature good and over half (53 percent) indicated fair. The other Services were significantly more favorable to this feature than the Army. Twelve percent or less of all cooks thought this feature poor or very poor.

Part b. *Recipe layout on cards.* As with the preceding feature, cooks in the other three Services were significantly more favorable to this feature than the Army cooks; 52 to 56 percent of the former thought the feature good or very good compared to 37 percent of the Army cooks. From 39 to 52 percent of all respondents rated this feature fair, and 12 percent or less rated it poor or very poor.

Part c. *Logical order of steps.* From 45 (Army) to 57 percent (Marines) considered this feature good or very good. The Army mean rating was significantly lower than the Marines. From 36 (Marines) to 42 percent (Army) considered this feature fair, while 7 to 12 percent of the remainder thought the feature poor or very poor.

Part d. *Guidelines cards.* On average, all Services rated this feature between fair and good. From 43 (Army) to 53 percent (Marines) rated the guidelines cards good or very good. The difference between means for these two Services was significant, but small (0.3 scalepoint).

Part e. *Conversions cards.* Mean ratings indicated all Services were positive to some degree about this feature, i.e., rated between fair and good. No significant differences were found, and from 37 (Army) to 46 percent (Air Force and Marines) thought this feature good or very good. More than 40 percent (43 to 45) of cooks in all Service considered this feature fair.

Part f. *Accuracy of yields.* There were no significant differences in mean responses among Services. Overall, mean ratings were close to the fair category on the scale. From 33 (Army) to 41 percent (Air Force) considered accuracy of yields good or very good.

Part g. *Usefulness of spiral bound Index of Recipes.* No significant differences in means were found among Services. Those cooks rating this feature as good or very good ranged from 48 (Army) to 61 percent (Marines). Another 28 (Air Force) to 40 percent (Army) rated it fair. With the exception of the Army, means were closer to the good than to the fair category.

Part h. *Usefulness of index cards (beginning of category).* Overall, cooks were marginally more positive to this feature than to the separate bound Index, the mean ratings being closer to the good than the fair scale category. Marine ratings were significantly higher than the Army, but with only a 0.3

**Table 6.** Responses to question 10: "Using the scale below, rate the following features of AFRS recipe cards."

	Frequency (%)							
Five Point Scale:	Very Poor	Poor	Fair	Good	Very Good			
	(1)	(2)	(3)	(4)	(5)	n	Mean	± SD
<b>Air Force</b>								
a. Dimensions	0.0	5.8	36.2	47.8	10.1	69	3.6	± 0.8
b. Recipe layout	0.0	2.9	40.6	53.6	2.9	69	3.6	± 0.6
c. Logical order	1.4	10.1	39.1	42.0	7.2	69	3.4	± 0.8
d. Guidelines cards	0.0	2.9	48.5	42.6	5.9	68	3.5	± 0.7
e. Conversions cards	1.5	8.8	44.1	39.7	5.9	68	3.4	± 0.8
f. Yield accuracy	1.5	11.8	45.6	36.8	4.4	68	3.3	± 0.8
g. Spiral bound Index	0.0	13.4	28.4	38.8	19.4	67	3.6	± 1.0
h. Category indices	1.5	1.5	36.8	44.1	16.2	68	3.7	± 0.8
i. Color coding	0.0	2.9	14.5	55.1	27.5	69	4.1	± 0.7
j. Simplified prep'n	0.0	7.4	27.9	55.9	8.8	68	3.7	± 0.8
k. Usefulness - Notes	0.0	2.9	36.2	46.4	14.5	69	3.7	± 0.8
l. Latest ingredients	2.9	13.2	48.5	30.9	4.4	68	3.2	± 0.8
m. Latest equipment	2.9	16.2	30.9	44.1	5.9	68	3.3	± 0.9
n. Physical condition	5.8	21.7	21.7	43.5	7.2	69	3.3	± 1.1
<b>Army</b>								
a. Dimensions	3.6	8.2	52.8	32.8	2.6	195	3.2	± 0.8
b. Recipe layout	2.1	10.3	50.5	33.5	3.6	194	3.3	± 0.8
c. Logical order	3.1	9.3	42.3	41.8	3.6	194	3.3	± 0.8
d. Guidelines cards	4.1	6.7	46.7	38.5	4.1	195	3.3	± 0.8
e. Conversions cards	6.7	11.9	44.8	28.9	7.7	194	3.2	± 1.0
f. Yield accuracy	6.2	17.6	43.5	29.0	3.6	193	3.1	± 0.9
g. Spiral bound Index	4.2	8.4	39.8	34.6	13.1	191	3.4	± 1.0
h. Category indices	2.1	8.2	41.0	35.4	13.3	195	3.5	± 0.9
i. Color coding	2.6	4.6	29.1	39.3	24.5	196	3.8	± 1.0
j. Simplified prep'n	2.6	5.7	41.2	42.8	7.7	194	3.5	± 0.8
k. Usefulness - Notes	2.1	10.4	43.5	33.7	10.4	193	3.4	± 0.9
l. Latest ingredients	5.1	20.0	44.6	27.7	2.6	195	3.0	± 0.9
m. Latest equipment	8.7	16.8	44.4	26.5	3.6	196	3.0	± 1.0
n. Physical condition	13.4	17.0	42.8	22.2	4.6	194	2.9	± 1.1
<b>Marines</b>								
a. Dimensions	0.0	2.7	46.5	42.8	8.0	187	3.6	± 0.7
b. Recipe layout	0.5	4.3	39.0	44.4	11.8	187	3.6	± 0.8
c. Logical order	1.1	6.0	35.5	45.4	12.0	183	3.6	± 0.8
d. Guidelines cards	1.1	4.8	41.2	40.6	12.3	187	3.6	± 0.8
e. Conversions cards	3.3	12.0	38.6	37.0	9.2	184	3.4	± 0.9
f. Yield accuracy	1.6	20.3	43.3	27.3	7.5	187	3.2	± 0.9
g. Spiral bound Index	2.2	7.7	29.3	42.0	18.8	181	3.7	± 0.9
h. Category indices	1.6	5.3	28.9	42.2	21.9	187	3.8	± 0.9
i. Color coding	0.5	3.2	19.7	40.4	36.2	188	4.1	± 0.9
j. Simplified prep'n	0.5	2.7	40.9	44.1	11.8	186	3.6	± 0.8
k. Usefulness - Notes	0.5	8.1	34.9	43.0	13.4	186	3.6	± 0.8
l. Latest ingredients	3.2	11.3	39.8	37.1	8.6	186	3.4	± 0.9
m. Latest equipment	4.3	15.6	39.8	31.2	9.1	186	3.3	± 1.0
n. Physical condition	2.7	13.3	36.7	36.7	10.6	188	3.4	± 0.9

**Table 6.** Responses to question 10: "Using the scale below, rate the following features of AFRS recipe cards."  
(con't)

	Frequency (%)							
Five Point Scale:	Very Poor	Poor	Fair	Good	Very Good			
	(1)	(2)	(3)	(4)	(5)	n	Mean	± SD
<b>Navy</b>								
a. Dimensions	1.1	8.8	42.3	34.1	13.7	182	3.5	± 0.9
b. Recipe layout	2.2	3.3	42.1	40.4	12.0	183	3.6	± 0.8
c. Logical order	1.1	9.3	41.8	36.8	11.0	182	3.5	± 0.9
d. Guidelines cards	3.9	6.7	41.1	36.1	12.2	180	3.5	± 0.9
e. Conversions cards	4.4	6.6	44.2	32.6	12.2	181	3.4	± 0.9
f. Yield accuracy	7.7	16.4	37.7	29.0	9.3	183	3.2	± 1.1
g. Spiral bound Index	5.0	3.3	35.4	34.3	22.1	181	3.7	± 1.0
h. Category indices	2.2	4.9	35.7	36.3	20.9	182	3.7	± 0.9
i. Color coding	2.2	3.9	31.7	37.2	25.0	180	3.8	± 0.9
j. Simplified prep'n	0.5	3.3	46.2	36.8	13.2	182	3.6	± 0.8
k. Usefulness - Notes	2.2	7.1	37.7	38.3	14.8	183	3.6	± 0.9
l. Latest ingredients	6.6	13.1	42.6	27.3	10.4	183	3.2	± 1.0
m. Latest equipment	8.3	11.6	42.5	28.2	9.4	181	3.2	± 1.0
n. Physical condition	10.4	15.3	40.4	25.1	8.7	183	3.1	± 1.1
<b>All Services</b>								
a. Dimensions	1.4	6.5	46.1	37.8	8.2	633	3.5	± 0.8
b. Recipe layout	1.4	5.7	43.6	40.9	8.4	633	3.5	± 0.8
c. Logical order	1.8	8.4	39.8	41.4	8.6	628	3.5	± 0.8
d. Guidelines cards	2.7	5.7	43.7	38.9	9.0	630	3.5	± 0.8
e. Conversions cards	4.5	10.0	42.7	33.5	9.3	627	3.3	± 0.9
f. Yield accuracy	4.8	17.4	42.0	29.3	6.5	631	3.2	± 1.0
g. Spiral bound Index	3.4	7.3	34.2	37.1	18.1	620	3.6	± 1.0
h. Category indices	1.9	5.7	35.4	38.6	18.4	632	3.7	± 0.9
i. Color coding	1.6	3.8	25.4	40.8	28.4	633	3.9	± 0.9
j. Simplified prep'n	1.1	4.3	41.1	42.9	10.6	630	3.6	± 0.8
k. Usefulness - Notes	1.4	7.9	38.5	39.1	13.0	631	3.5	± 0.9
l. Latest ingredients	4.7	14.7	43.0	30.7	6.8	632	3.2	± 0.9
m. Latest equipment	6.7	14.9	41.0	30.3	7.1	631	3.2	± 1.0
n. Physical condition	8.5	15.9	38.0	29.7	7.9	634	3.1	± 1.1

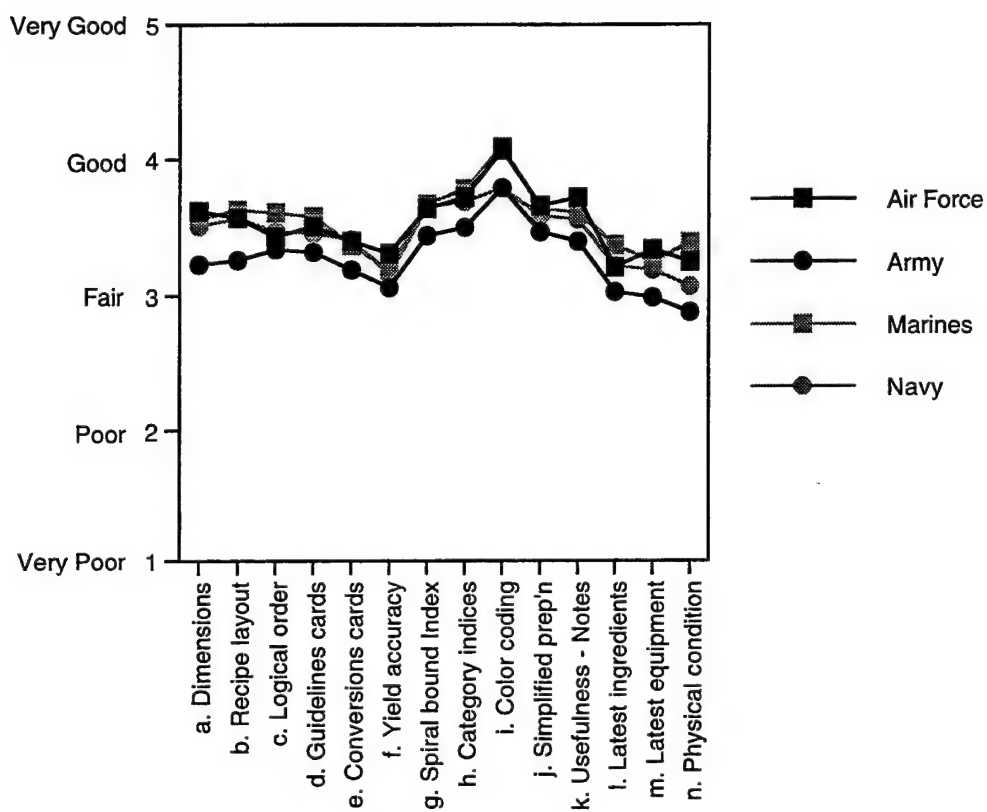


Figure 3. Question 10. Plots of Mean Ratings, Four Services

scalepoint difference. From 49 (Army) to 63 percent (Marines) indicated good or very good, while 29 (Marines) to 41 percent (Army) indicated fair.

Part i. *Color coding of each recipe category.* On average, respondents rated this feature good, the Marine cooks rating significantly higher than the Army and the Navy. From 62 (Navy) to 83 percent (Air Force) indicated good or very good, and 15 (Air Force) to 29 percent (Army) indicated fair.

Part j. *Use of simplified preparation procedures.* Overall, cooks rated this feature halfway between fair and good, and no significant differences were found among Services. From 50 (Navy) to 64 percent (Air Force) of the cooks considered this feature good or very good, and 28 (Air Force) to 46 percent (Navy) indicated fair.

Part k. *Usefulness of Notes on recipes.* Overall response to this feature was midway between fair and good. Although the difference was small (0.3) scalepoint, the Air Force was significantly more positive about this feature than the Army. From 44 (Army) to 61 percent (Air Force) of the cooks indicated good or very good, while 35 (Marines) to 44 percent (Army) rated fair.

Part l. *Make use of latest ingredients.* The overall opinion of this feature was close to the fair scale category, the Marines rating this feature significantly higher than the Army. The range of respondents rating good or very good was from 30 (Army) to 46 percent (Marines); those rating fair ranged from 40 (Marines) to 48 percent (Air Force).

Part m. *Make use of latest equipment.* From 30 (Army) to 50 percent (Air Force) thought this feature good or very good. Overall, mean responses marginally exceeded fair, and both Marine and Air Force cooks rated this statement significantly higher than the Army. From 31 (Air Force) to 44 percent (Army) indicated fair.

Part n. *Present physical condition of card file.* The overall mean response was marginally greater than fair. Marine cooks' mean responses indicated significantly better condition than the Army and Navy. From 34 (Navy) to 51 percent (Air Force) indicated good or very good condition, while 22 (Air Force) to 40 percent (Navy) indicated fair condition. Of those indicating poor or very poor condition, the range was 16 percent for the Marines to 30 percent for the Army.

Question 11. *In addition to the above features (referring to Question 10), list any recommendations you have for changing recipe cards.* This question was intended to identify other features not rated in Question 10. Verbatim comments are tabulated by Service in Appendix Tables C1-C4 and listed, unsorted, in the order the questionnaires were read. Of the 642 respondents, 176 (27.4%) commented. Examination of the comments indicates that the most frequent recommendation (53 respondents - 30%) was to laminate or otherwise protect the cards with plastic to prevent moisture damage while they are in use. The majority of

the other comments dealt with areas specifically covered by rating scale questions: color coding, conversions, reducing numbers of recipes, recipe additions/deleting, pictures, seasoning and spicing, readability and others. One Army cook recommended downloading (of the present recipe cards), into their AFMIS system; another called for comparison of AFMIS with AFRS recipes. One Navy cook wanted computers for the cards and conversion work; another wanted a computer disk (for storage of) recipes instead of cards. *Italicized wording in parentheses is the author's.*

Question 12, Table 7. *The following are statements about AFRS and recipe cards. Indicate the extent to which you agree or disagree with each of the statements using the following scale.* Plots of the mean ratings are given in Figure 4, and for most parts of the question, indicate close agreement among Services.

Part a. *Generally, AFRS meets our needs in a timely fashion.* Mean values indicated that cooks of all Services agreed to a slight extent with the statement. No significant differences occurred among Services. More than one third of all respondents agreed "moderately" or "strongly" with the statement, ranging from 36 percent for the Army to 45 percent for the Marines. More than 40 percent of all respondents were neutral (neither agree nor disagree), ranging from 41 percent (Air Force) to 45 percent (Navy).

Part b. *Our dining facility automatically receives recipe card changes.* As indicated by the mean values, there was disagreement with the statement. Army cooks disagreed with the statement to a significantly greater extent than Navy and Marine cooks.

Part c. *Recipes reflect the preferences of today's dining facility patrons.* The mean response of all cooks was close to the neither agree nor disagree category, and no significant differences were found among Services. Higher percentages of cooks in all Services (31 - Navy to 43 - Air Force) disagreed than agreed (24 Air Force to 29 - all others) with the statement, while slightly more than one third (34 to 39 percent) neither agreed nor disagreed.

Part d. *If I submit a Recipe Action Review Sheet to AFRS, I receive a personal response.* Two-thirds or more (65 percent of Army cooks to 74 percent of Marine cooks) neither agreed nor disagreed with the statement. The mean ratings of Marine and Navy cooks was significantly different from the Army, but the difference was only 0.2 scalepoint. The reaction to the statement may mean (1) that cooks generally do not submit Review Sheets themselves, or (2) if they do submit one through channels, they do not know if there has been a formal response from AFRS.

Part e. *AFRS recipe cards produce high quality food.* Overall, the mean response of all cooks to this statement was neutral with no significant differences among the four Services. From 33 (Air Force and Marines) to 45 percent (Army) agreed with the statement while one-third of the respondents (31 percent of the Navy to 41 percent of the Air Force) were neutral.

**Table 7.** Responses to question 12: "The following are statements about AFRS and the recipe cards. Indicate the extent to which you agree or disagree with each of the following statements using the following scale."

Frequency (%)								
Five Point Scale:	Disagree Strongly (1)	Disagree Moderate (2)	Neither (3)	Agree Moderate (4)	Agree Strongly (5)	n	Mean	± SD
<b>Air Force</b>								
a. Meet needs - timely	2.9	11.8	41.2	35.3	8.8	68	3.4	± 0.9
b. Changes received	16.9	20.0	40.0	18.5	4.6	65	2.7	± 1.1
c. Reflect preferences	10.3	32.4	33.8	16.2	7.4	68	2.8	± 1.1
d. Response/Action Sheet	7.5	7.5	68.7	16.4	0.0	67	2.9	± 0.7
e. Recipes - high quality	4.3	21.7	40.6	29.0	4.3	69	3.1	± 0.9
f. Provide nutrition info	2.9	7.2	20.3	27.5	42.0	69	4.0	± 1.1
g. Steps simplified	0.0	2.9	30.4	55.1	11.6	69	3.8	± 0.7
h. Utilize all equipment	5.9	10.3	38.2	29.4	16.2	68	3.4	± 1.1
i. NSN/UPC codes on cards	7.2	15.9	31.9	17.4	27.5	69	3.4	± 1.3
j. Cards out when cooking	1.4	7.2	23.2	23.2	44.9	69	4.0	± 1.1
k. Ingredients save labor	4.3	17.4	47.8	20.3	10.1	69	3.1	± 1.0
<b>Army</b>								
a. Meet needs - timely	4.2	15.6	43.8	33.9	2.6	192	3.2	± 0.9
b. Changes received	28.0	25.4	21.8	19.2	5.7	193	2.5	± 1.2
c. Reflect preferences	12.6	23.7	34.7	25.3	3.7	190	2.8	± 1.1
d. Response/Action Sheet	13.0	9.7	65.4	9.7	2.2	185	2.8	± 0.9
e. Recipes - high quality	5.7	17.6	32.1	36.8	7.8	193	3.2	± 1.0
f. Provide nutrition info	2.6	7.3	21.4	32.8	35.9	192	3.9	± 1.1
g. Steps simplified	2.6	13.0	20.2	49.2	15.0	193	3.6	± 1.0
h. Utilize all equipment	6.2	18.7	28.5	37.3	9.3	193	3.3	± 1.1
i. NSN/UPC codes on cards	13.5	17.2	41.7	18.8	8.9	192	2.9	± 1.1
j. Cards out when cooking	3.6	5.7	12.0	18.8	59.9	192	4.3	± 1.1
k. Ingredients save labor	7.8	15.5	38.9	28.0	9.8	193	3.2	± 1.1
<b>Marines</b>								
a. Meet needs - timely	3.2	9.1	42.5	40.3	4.8	186	3.3	± 0.8
b. Changes received	7.5	21.5	49.5	17.7	3.8	186	2.9	± 0.9
c. Reflect preferences	11.4	22.7	37.3	20.5	8.1	185	2.9	± 1.1
d. Response/Action Sheet	3.3	9.4	74.0	9.9	3.3	181	3.0	± 0.7
e. Recipes - high quality	4.8	24.6	37.4	29.4	3.7	187	3.0	± 0.9
f. Provide nutrition info	2.7	5.5	25.7	29.5	36.6	183	3.9	± 1.0
g. Steps simplified	2.1	14.4	31.6	36.4	15.5	187	3.5	± 1.0
h. Utilize all equipment	4.9	15.8	31.0	33.7	14.7	184	3.4	± 1.1
i. NSN/UPC codes on cards	8.6	9.1	53.2	18.3	10.8	186	3.1	± 1.0
j. Cards out when cooking	5.9	3.2	17.1	27.8	46.0	187	4.1	± 1.1
k. Ingredients save labor	8.7	12.0	44.0	27.2	8.2	184	3.1	± 1.0

**Table 7.** Responses to question 12: "The following are statements about AFRS and the recipe cards. Indicate the extent to which you agree or disagree with each of the following statements using the following scale."

Five Point Scale:	Frequency (%)					n	Mean	±	SD
	Disagree Strongly (1)	Disagree Moderate (2)	Neither (3)	Agree Moderate (4)	Agree Strongly (5)				
<b>Navy</b>									
a. Meet needs - timely	3.8	7.1	44.8	38.8	5.5	183	3.4	±	0.8
b. Changes received	10.4	16.5	52.7	16.5	3.8	182	2.9	±	0.9
c. Reflect preferences	8.8	22.7	39.2	25.4	3.9	181	2.9	±	1.0
d. Response/Action Sheet	6.7	5.0	70.9	14.0	3.4	179	3.0	±	0.8
e. Recipes - high quality	6.5	19.6	31.0	35.3	7.6	184	3.2	±	1.0
f. Provide nutrition info	2.7	1.6	23.9	34.8	37.0	184	4.0	±	1.0
g. Steps simplified	3.3	9.8	33.7	40.2	13.0	184	3.5	±	1.0
h. Utilize all equipment	4.4	14.8	33.0	38.5	9.3	182	3.3	±	1.0
i. NSN/UPC codes on cards	12.6	12.6	38.5	21.4	14.8	182	3.1	±	1.2
j. Cards out when cooking	2.7	3.3	21.3	29.5	43.2	183	4.1	±	1.0
k. Ingredients save labor	7.7	10.4	43.4	27.5	11.0	182	3.2	±	1.0
<b>All Services</b>									
a. Meet needs - timely	3.7	10.8	43.4	37.4	4.8	629	3.3	±	0.9
b. Changes received	15.7	21.1	40.9	17.9	4.5	626	2.7	±	1.1
c. Reflect preferences	10.9	24.0	36.7	22.9	5.4	624	2.9	±	1.1
d. Response/Action Sheet	7.7	8.0	69.9	11.8	2.6	612	2.9	±	0.8
e. Recipes - high quality	5.5	20.7	34.3	33.3	6.2	633	3.1	±	1.0
f. Provide nutrition info	2.7	5.1	23.2	31.8	37.1	628	4.0	±	1.0
g. Steps simplified	2.4	11.4	28.6	43.4	14.2	633	3.6	±	1.0
h. Utilize all equipment	5.3	15.8	31.6	35.7	11.6	627	3.3	±	1.0
i. NSN/UPC codes on cards	11.1	13.4	43.1	19.2	13.2	629	3.1	±	1.1
j. Cards out when cooking	3.8	4.4	17.4	25.0	49.3	631	4.1	±	1.1
k. Ingredients save labor	7.6	13.2	42.7	26.8	9.7	628	3.2	±	1.0



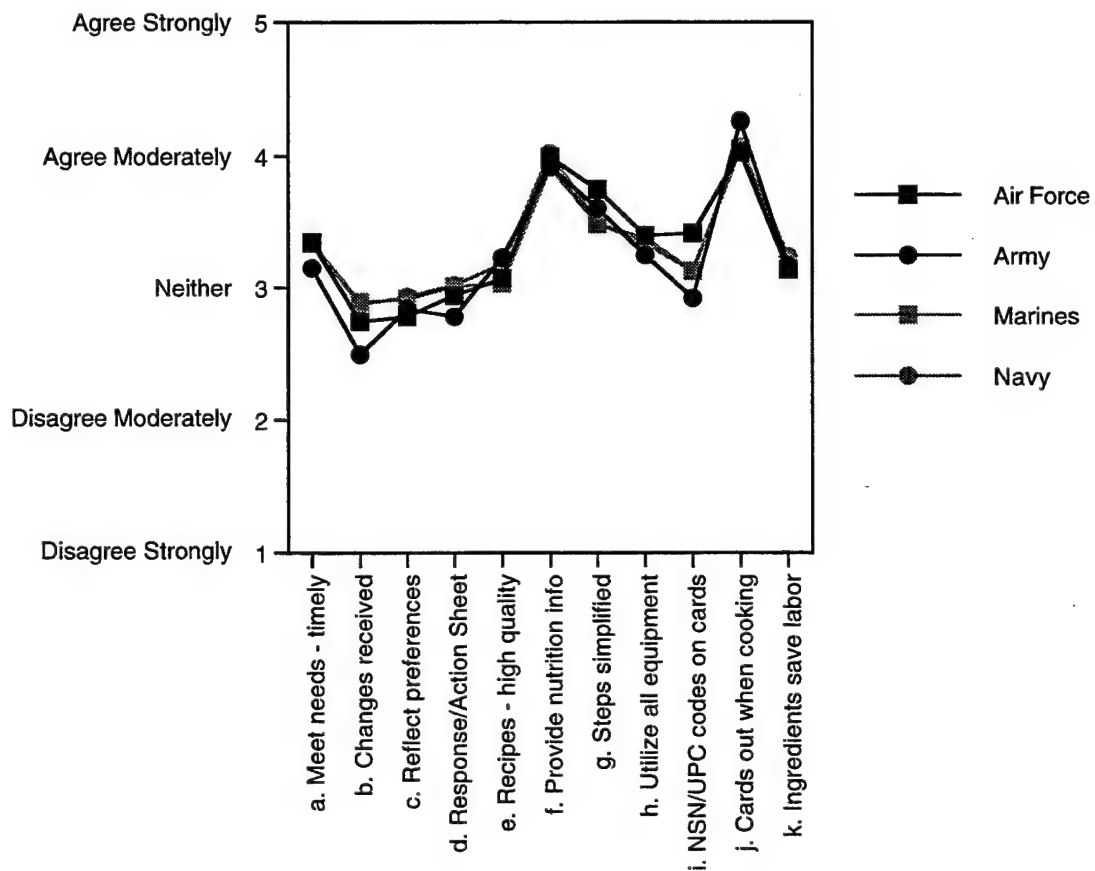


Figure 4. Question 12. Plots of Mean Ratings, Four Services

Part f. *Recipe cards should provide nutritional information to pass on to dining hall patrons.* On average, cooks of all Services agreed with this statement, and no significant differences occurred. From 64 (Army) to 72 percent (Navy) of the respondents agreed moderately or strongly and one-quarter or less of all respondents were neutral. Less than 10 percent disagreed.

Part g. *Generally, recipe steps are as simplified as they can be.* Mean values (3.5 for the Marines and Navy to 3.8 for the Air Force) indicated slight agreement with the statement. No significant differences were found. More than half the respondents agreed moderately and strongly, ranging from 52 percent for the Marines to 67 percent for the Air Force. From 20 (Army) to 34 percent (Navy) were neutral.

Part h. *Recipe cards enable us to utilize all the cooking equipment we have in our facility.* The mean values indicated that cooks in all Services marginally agreed with the statement. There were no significant differences among Services. From 46 (Air Force) to 48 percent (all others) of the respondents agreed, and 28 (Army) to 33 percent (Navy) were neutral.

Part i. *It would be helpful if NSN and/or UPC codes were given on recipe cards for all ingredients.* The Air Force cooks' responses to this question indicated slight agreement (mean: 3.4) with the statement, while the other three Services were close to neutral. The Air Force mean was significantly different from the Army. From 28 (Army) to 45 percent (Air Force) agreed moderately or strongly with the statement, and 32 (Air Force) to 53 percent (Marines) were neutral to the idea. Twenty-five percent or less indicated moderate and strong disagreement.

Part j. *Whenever we cook any item, we are told to have its recipe card out for reference.* On average, cooks from all Services agreed moderately with this statement, and no significant differences occurred. More than two thirds of the cooks agreed moderately and strongly, from 68 percent for the Air Force to 79 percent for the Army. Less than 25 percent were neutral and less than 10 percent disagreed.

Part k. *Recipe cards enable us to use the latest labor saving ingredients.* Mean values indicated that cooks from all Services agreed marginally with the statement. No significant differences among Services were found. A total of one third or more of the respondents (30 percent, Air Force to 38 percent, Army and Navy) agreed moderately and strongly with the statement, while 39 (Army) to 48 percent (Air Force) were neutral.

#### Problem Recipes, Suggested Additions and Deletions

Question 13, Appendix Table D-1. *In the lefthand column, list as many as six (6) recipes you are having problems with now. In the righthand column, briefly state what the problem is (examples were given).* Across the four Services, the six most frequently mentioned problem recipes were: various preparations of liver, 16 times; lasagna, 12; creamed beef 12; beets, 9; beef and corn pie, 9; and sweet and sour pork, 7. A considerable variety of recipes from most categories in the recipe file made

up the rest of the mentions. A majority of these were main meal meat or meat combination items. The interested reader will find that nearly all mentions are currently in or were previously in the recipe file, but a small proportion may be "local" recipes. Prevalent problems mentioned, particularly for the most frequently mentioned recipes were insufficient yield or not liked/eaten by patrons.

Question 14, Appendix Table D-2. *List as many as six (6) recipes you feel should be added to the recipe file.* A considerable variety of food items were mentioned, some associated with locations in the world where the cook-respondents were stationed. No single item(s) or category of items was mentioned frequently enough to recommend that effort be expended to develop the recipe for addition to the file. Some items mentioned are presently in the recipe file.

Question 15, Appendix Table D-3. *List as many as six (6) recipes you feel should be dropped from the recipe file.* As can be seen in the Table, some of the most frequently mentioned recipes were also most frequently mentioned as problem recipes in Question 13 above. The six most frequent mentions were: various preparations of liver (31), rabbit/fried rabbit (14), chuck wagon stew (8), chicken-vegetable or mulligatawny soup (8), tuna and noodles (7), ham (6) and beets (6). The most common reasons given for dropping recipes were low acceptability/disliked/not eaten by patrons and the time/labor involvement in preparation.

#### Additional Verbatim Comments

Question 17, Appendix E, Tables 1 through 4. *In this space, please make any comments about matters not covered in the survey.* Of 647 respondents, 60 (9.3%) commented. In these verbatim comments, a considerable variety of topics were covered. No prominent additional issue(s) emerged beyond those already reported. Comments covered a variety of issues: addition of more ethnic, vegetarian and "healthy" recipes, respect for cooks, desire for computerization, lack of repair parts for equipment, remarks about local operations, starting quality of ingredients and more.

#### Kitchen Equipment on Hand in Dining Halls

Question 16, Table 8. *The following is a list of kitchen equipment. Please indicate whether you have them in your kitchen.* Of the 10 equipment units surveyed, the first five listed are prevalent in the kitchens of all four Services. The percent statistics suggested that not all kitchens have both conventional and convection ovens; this was particularly evident with the Navy. Availability of the broiler unit was reported by only 12 (Navy) to 29 percent (Air Force) of the cooks. The microwave oven appears to be widely used in Air Force and Navy facilities but used to a considerably lesser extent by the Army and the Marines. Finally, this sampling of military bases and ships suggests the microwave/convection oven has not yet been widely adopted.

**Table 8. Equipment On Hand in Respondents' Kitchens**

Equipment Unit	Percent of Those Responding (%)			
	AF n=69	Army n=197	Marines n=191	Navy n=185
1. Steam Jacketed Kettles	95.5	88.5	98.9	99.5
2. Steamer	85.3	90.6	95.6	89.1
3. Tilt Griddle	92.6	97.3	90.1	50.3
4. Griddle	94.0	94.9	97.8	97.3
5. Deep Fat Fryer	95.6	95.4	98.9	98.9
6. Conventional Oven	79.1	84.5	86.7	65.0
7. Convection Oven	81.2	91.9	93.3	64.0
8. Broiler	29.0	16.2	25.7	11.9
9. Microwave Oven	72.5	37.1	23.7	75.7
10. Microwave/convection oven	13.0	10.2	13.4	20.6

Post-Survey Discussion Groups. At all sites visited, discussion groups will held to determine whether any issues regarding recipes and the AFRS had been overlooked in the written survey and to elicit greater detail concerning issues that had been raised on the survey instrument. The script and verbatim results of the discussion groups with the Army, Marines and Navy are given in Appendix F, Sections 1 to 3, respectively. As indicated earlier, no Air Force sites were visited.

Issues raised in discussion groups generally supported respondents' written comments. The interested reader may impose his/her own interpretation of the extent to which issues from these sessions can/should be addressed by AFRS.

## CONCLUSIONS AND RECOMMENDATIONS

From the data reported herein, the following conclusions and recommendations are offered:

1. As evidenced by responses to Question 7a, the adoption by/distribution to the Army of REVISION is lagging substantially behind other Services. The problem may be due in part to the use of the AFMIS system in which recipes are from a previous Change. It is difficult to determine whether a similar problem exists with the Marine computerized system since a high percentage of cooks are not aware of what version is in use. In any event, there is a need to deliver approved revised recipes directly to these computerized systems without manual entry into these systems. Doing so would prevent errors which Army and Marine cooks claim were the problem in discussion groups.

2. Question 8. No serious difficulties were revealed in using and maintaining the recipe card file. The relatively high percent of "neither easy nor difficult" responses to revising/updating, requesting additions/deletions and reporting errors could be interpreted to mean that many of the respondents do not get involved with these activities themselves.

3. Question 9. A majority of respondents across the four Services thought the number of recipes, number of steps and amount of detail "just right." Although half the respondents thought fat levels just right, another third thought them too high. This impression, as revealed by discussion groups may come in part from the observation that raw meats for roasting are perceived to have considerable cover fat. It may also signal an unawareness of efforts to reduce fat in recipes and the fact that recipes presently in their files reflect this.

The most critical issue raised by the cooks is that seasoning/spicing levels are too low. Discussion groups revealed that authorization is requested by cooks in some facilities to increase levels, particularly of spicing. A possible solution when spicing is an issue would be to establishing "low", "moderate" and "high" use levels for recipes in which characterizing spice(s) contribute significantly to final cooked product flavor. Then, local food service systems would be at liberty to accommodate local "tastes" The system could be similar to that used by Thai restaurants to inform consumers of the approximate hot spice level used in their menu items. On portion size, although about half of the respondents consider them just right, another half consider them too small. This was particularly true of Army cooks. Whether action is necessary here depends upon whether dining hall policies allow second helpings of items, particularly entrees, for those consumers wanting them. In general, cooks thought there are not enough regional or ethnic recipes. As reported herein, ideas for addition of ethnic recipes evidently came from cooks stationed in various OCONUS areas who

are introduced to these foods. This appears to be an important area for future recipe development and need not be restricted to items related to Italian, Mexican or Chinese cuisines.

4. Question 10. No serious problems were uncovered in this 14 part question, nor were any features rated in the good to very good range. Mean ratings across the board were in the fair to good range. Post-survey discussion groups often brought up the issue of yield (Part f), but as a Marine Food Service Sergeant/food technologist pointed out to cooks following the discussions, many yield problems could be attributed to a failure to understand and/or follow procedures. To a lesser extent, raw product or ingredient problems could also explain shortfalls in yield. Contrary to the impression gained from examination of a recipe card file at an ashore Navy facility which clearly was in poor condition, the overall impression of cooks across all Services is that it is in at least fair condition.

5. Question 12. Several parts of this question suggest ways AFRS could better serve its customers, the cooks. Although AFRS is perceived as generally meeting their needs (Part a), cooks disagreed that their dining facilities automatically receive recipe card changes or that recipes reflect the preference of today's patrons. Cooks were generally neutral about the response from AFRS regarding a Recipe Action Review Sheet (note caveats in the previous discussion of this questions, part d), the statement that high quality food can be produced from recipe cards (part e), the inclusion of UPC/NSN Codes with recipe ingredients. There was marginal agreement with two "state-of-the-art," questions regarding utilization of available cooking equipment (Part h) and labor saving ingredients (Part k). Cooks are generally told to have recipe cards out when preparing an item. Finally, there was generally high agreement that recipe cards should have nutritional information on them to pass on to patrons (Part e). There undoubtedly is a better way(s) to convey this information to consumers than on recipe cards themselves, since the information would need to be transcribed to point of sale media such as signs, TV screens, table tents and the like.

Problem recipes, as well as the cooks' recommendations for additions and deletions, were discussed earlier. The other comment questions generally did not reveal issues concerning AFRS not already covered by the questionnaire, but tended to support/enhance information provided by the rating scale questions.

## **APPENDICES**





**Appendix A. Example of Instruction Set Given Orally  
For a Site Visit**

## INSTRUCTIONS

1. Purpose of this survey is to find out how effective the Armed Forces Recipe Service (AFRS) is in meeting the needs of cooks and their supervisors. Directive for the survey is from the Office of the Assistant Secretary of Defense with the support of Mrs. Adolphi, HQDA and FORSCOM.

2. What is the Armed Forces Recipe Service? It is a Joint Services Committee responsible for the creation, revision, publication and distribution of recipes used in military dining halls.

3. Filling in the questionnaire:

a. Use only the Number 2 pencils provided.

b. Note that you don't have to fill in the ovals completely; a small round mark will do. The mark must be round; please do not use checkmarks or X's.

c. To assure that we get only your opinions, please do not talk during the survey. Some of you will have a chance to discuss your concerns about the recipe service with us afterwards.

d. Since all of you are training at the present time, *you should answer all questions with reference to the dining facility to which you are presently assigned, and not to the School.*

4. We want to reemphasize that your responses are confidential and that the survey deals with the performance of the Recipe Service, **not your performance on the job.**

5. Thank you for your cooperation!!!

**Appendix B. Example of Covering Letter and Instructions  
For Survey Conducted By Mail**

01760-5020

SATNC-YBC

27 October 1994

Commanding Officer  
USS George Washington (CVN 73)  
ATTN: LTJG Pearson, Food Service Officer  
FPO AE 09550-2873

SUBJECT: Army Forces Recipe Service (AFRS) Survey

REFERENCE: (1) NAVFSSO ltr to NATICK 5609/2 Ser FN/1218 of 7 Sep  
1994 and (2) NAVFSSO ltr to distn 5609/2 Ser FN/1423  
of 20 Oct 1994

1. The purpose of subject survey is to determine how effectively AFRS is serving the needs of its customers, your cooks and their supervisors.

2. Enclosed are: (1) 70 questionnaires for your cooks and supervisors to fill out (based on the number we estimate you have aboard); (2) half as many No.2 pencils (I assume not everyone will fill out the questionnaires at one time); (3) instruction sheet for handing out and collecting filled in questionnaires; and (4) an addressed postage paid envelope for returning the questionnaires to me at the U.S. Army Natick RD & E Center.

3. Your cooperation is greatly appreciated. I regret we cannot visit you personally but time and cost constraints prevent us from doing that at this time.

4. If you have additional questions or concerns about this effort, feel free to call me at DSN: 256-4721; Commercial: (508) 651-4721 between 0730 and 1600 Eastern Standard Time. An answering machine will take a message at other times.

Robert A. Kluter, Project Officer  
Consumer Research Branch

## Instructions for Administering AFRS Survey

***What is the Armed Forces Recipe Service?*** It is a Joint Services Committee responsible for the creation, revision, publication and distribution of recipes used in military dining halls.

1. Please have your cooks and their supervisors fill out the survey at a time when they are not preparing and serving a meal. This is best done as part of a roll call or meeting.
2. Assure your people that their responses are *confidential*, and that we are surveying the effectiveness of the Armed Forces Recipe Service in meeting their needs. We are *not* evaluating their job performance!
3. It will take 20 to 30 minutes to fill out the survey. Some people may take longer if they answer the write-in questions (Numbers 11, 13, 14, 15 and 17).
3. Because we want each individual to give *only* his/her own opinions, it is important there be no talking when the survey is being filled out.
4. Please be sure *only* the number 2 pencils provided are used to mark the survey form. The proper mark is shown at the top of Page 1. *The entire oval does not have to be filled in; a small round mark will do.*
5. Collect the completed surveys. Place them and any leftover survey forms into the addressed postage paid return envelope and mail. You may retain the pencils.
6. Thanks you for your prompt attention to this matter.



**Appendix C. Verbatim Responses to Question 11:** *In addition to the above features (referring to Question 10 in which respondents were asked to rate 14 features of recipe cards), list any recommendations you have for changing recipe cards.*

Table C-1. Verbatim Recommendations for Changes to Recipe Cards: U.S. Air Force

No.	a	Site	b	Comment
1		2		More regional recipes, more varieties of pastries.
2		2		To work & change any recipe to make it better. Use the recipe cards only for training or field conditions.
3		12		Cooked version presentation of product in color. Fully laminated cards.
4		12		Could have how much recipe card yields. Should base it on amount of ingredients used
5		12		A few more recipes on the profesional level
6		12		Conversion cards
7		12		Simplify system
8		12		Accuracy of yields
9		12		I believe that before cards are deleted should put out surveys for a general poll
10		12		More color coding
11		12		Cards need revision in color coding. Also fats and sodium levels need upgrading to levels with civilian food industry.
12		12		Alternative low fat or fat free recipes, alternative methods of cooking recipes.
13		12		Not all recipes in file are in the index book
14		12		When overseas should print in both languages! Many cooks overseas cannot read English!
15		14		Need to make file numbers on each card larger
16		14		Make with lamination. Put in bold & larger #'s for identifying cards. Indicate prep and overall cook times on front of card to allow management of time
17		14		If they could be on a spiral and also laminated. This would be very helpful



Table C-1. U.S. Air Force (Continued)

No.	<sup>a</sup> Site	<sup>b</sup> Comment
18	17	Make each card 8 1/2 x 11. Laminate it and place in a loose leaf binder. Then have a binder for each category.
19	17	Some cards are the same category. each category should be a diff color
20	17	Laminate the cards
21	17	Laminate each card
22	17	I would appreciate more accurate recipes for salad bars.
23	17	Addition of cold plates for salad bars.

Footnotes

- a. Cardinal number, for counting
- b. Sites: 2, Grand Forks AFB, ND; 12, Langley AFB, VA; 14, Kadena AFB, Okinawa; 17, Mountain Home AFB, ID

Table C-2. Verbatim Recommendations for Changes to Recipes Cards: U.S. Army

No.	<sup>a</sup> Site	<sup>c</sup> Comment
1	1	Laminate cards
2	1	Down load straight into AFMIS system
3	1	Cards should have a plastic coating
4	1	There needs to be a protective coating on the cards. One day of use and the card is destroyed. Also food particles stuck on cards attract bugs!
5	1	Larger cards with print larger & put on a-laminate cover.
6	1	Cards need to be cleanable
7	1	When you want L19300 chicken fillets they have too many variations but when it comes up on the kitchen reg's quartered chicken.
8	1	Just add a little more seasoning
9	1	Simplify them and make short cuts. Also laminate cards. Give bigger portion sizes.
10	1	Besides adding more seasonings; add more recipes especially in the meat section.
11	1	We do not use card in DFAC, we use AFMIS and it is very incomplete. For example: the recipe for cream cheese calls for vanilla and it is not even on the ingredients list.
12	1	Add more spices
13	1	I feel we need the old recipe cards back- the new ones are ate up.
14	1	Add more spices
15	1	Less crowding in recipe file
16	1	More and different spices.
17	4	Put a plastic coating or something wipeable.

Table C-2. U.S. Army (Continued)

No.	<sup>a</sup> Site	<sup>c</sup> Comment
18	4	List on recipe card for 100 servings and for 25 servings- it would make progressive cooking easier.
19	4	Make cards smaller and made out of plastic
20	11	Color codes are great however-O & P plus Q & M are the same- confuses some people and they do not always replace in appropriate section.
21	13	Laminate cards- then reduce to 4x6.
22	13	Add more spices to baked meat
23	13	Add more spices to recipes for flavor enhancement
24	13	Put them in plastic covers
25	13	All items should be in sequence i.e. all beef items
26	13	Recipe cards should come with some kind of protective shield
27	13	The recipe cards should be laminated- they would last longer
28	13	They should be plastic coated
29	13	On certain cards- some steps contradict each other.
30	13	Bigger letters and numbers
31	13	Need to more specific as to slicing, dicing, cutting. Also need to be more specific when to add each ingredient.
32	13	Darker and larger print
33	13	Pastry and bread cards get mixed up frequently due to their similar colors- same with the salad and vegetable cards.
34	13	Get rid of index cards and use a spiral index
35	13	Cards should have plastic coating- reduce the size of the card and should be easier to replace if lost or damaged.
36	13	Change the size of the recipe cards - make them all smaller

Table C-2. U.S. Army (Continued)

No.	<sup>a</sup>	Site	<sup>c</sup>	Comment
37		13		Smaller cards and plastic coated
38		13		Use smaller cards and laminate them- they get damaged and ruined much too easily
39		13		Get rid of the cards altogether!
40		13		Recipe cards should be laminated so they don't fall apart- we also need more spices added since salt is bad for you.
41		13		Laminate or print on thin plastic (Washable)
42		13		Make them of plastic
43		13		Be specific on steps so end result can be identified from the recipe card. Also a better conversion calculation card should be designed
44		13		More seasoning
45		13		Show conversions- update with new recipes; ethnic and regional dishes
46		13		Cover w/ protective coating. Allow for shrinkage of meats & human error (slicing, etc.) when computing lbs. per 100
47		13		Be in correlation with today's mission, go to the actual line units and see how they do or do not work.
48		13		Compare AFMIS recipe information (input) w/AFRS and make changes
49		13		Make them out of something other than paper- gets too messy and it takes too long to cover all of them
50		13		Have a picture of each dish, so that a person who has never made the product before will know what it is supposed to look like
51		13		Larger portions for sliced meat items and some ground beef items such as Salisbury steak and ground beef cordon bleu. Make recipe cards out of a water resistant material or coating.

Table C-2. U.S. Army (Continued)

No.	<sup>a</sup> Site	<sup>c</sup> Comment
52	13	Add more spices or enhancing flavors to recipes.
53	13	The cards should come laminated to protect from spillage of liquid
54	13	Needs to be waterproof and tougher
55	13	The use of can/veg for accuracy of yields
56	13	They should come to the dining facility pre- laminated
57	13	Add more seasonings
58	13	Make recipe cards plastic, place in binder not box

## Footnotes

a. Cardinal number, for counting

c. Sites: 1, FT. Campbell, KY; 4, Camp Zama, Japan; 11, FT. Sherman, Panama; 13, FT. Lee, VA

Table C-3. Verbatim Recommendations for Changes to Recipe Cards: U.S. Marines

No.	<sup>a</sup> Site	<sup>d</sup> Comment
1	5	Give faster methods for cooking higher number of portions.
2	5	Take out recipes not used in cycled menu. Need a water proof coating on cards to prevent damage. Make steps more logical if preparing yield per 100.
3	5	Laminate cards
4	5	Needs to be updated
5	5	Need to be more detailed depending on recipe- ingredients such as seasonings and liquids.
6	5	Mashed potatoes- NFD should be mixed with water before adding to granules. Flour & cornmeal should be increased on deep fried items- there's never enough.
7	5	Use diff color cards- for salads, vegetables, breads & desserts
8	5	Too many recipe cards in file that are never used. Most of the time quantity per 100 comes up short.
9	5	Increase spice levels, basic recipes are too bland.
10	5	Cut out unnessecary steps on the recipe cards.
11	5	Use more colors when color coding cards, also need more detail when making product; food tastes bland.
12	5	Need more than one of each recipe card.
13	5	For those young marine an example should be given for accuracy.
14	5	Recipe cards need to be in better/ more specific ordror of preparation.
15	5	If the card is followed to a "T" the portions are not always correct (usually too short)
16	5	Cards need to have a protective coating.
17	5	Have all weather cards. so when they get wet or greasy it won't soil or damage cards.

Table C-3. U.S. Marines (Continued)

No.	<sup>a</sup> Site	<sup>d</sup> Comment
18	5	I haven't been in long enough to really know if the AFR is the best tool for the mess hall or not.
19	5	The old system works fine for me.
20	5	Add more seasoning to it.
21	5	More ethnic group dishes
22	6	Should make cards bigger
23	6	When involving the cooking of meats the cards should account for shrinkage and waste.
24	6	Larger portion sizes, add more spices, lower the fat and add a protective plastic covering
25	6	I feel that there should be a quarterly update to make sure revisions or changes in procedures are noted. Also to check to ensure there is a full set of recipe cards.
26	6	I feel that the cards should be laminated, so they last through wear & tear.
27	6	Make them out of laminated paper so they do not get wet
28	6	They need to add more spices.
29	6	Increase of healthy foods- change ingredients in recipes.
30	6	Should lower fat and cholesterol.
31	6	More seasonings needed- food is too bland; also bigger portions.
32	6	Something else for color for persons who are color blind use a laminate or better water resistant protective coating!
33	6	Change ingredients on card; some of the recipes come out too bland
34	6	Plastic coating sealed
35	6	Need to add more ingredients to products

Table C-3. U.S. Marines (Continued)

No.	<sup>a</sup>	Site	<sup>d</sup>	Comment
36		6		Updated new cards-with conversions
37		6		Make portions larger - with a better taste
38		6		Cut down the number of cards
39		6		More seasoning needed to take away dull taste
40		6		Make cards easier to read and recipes step by step.
41		6		The cards should be put in book and laminated
42		6		They should have some kind of protective laminate.
43		6		Recipes are too bland not enough flavorings
44		6		Laminate each card, stagger tabs for easy replacment
45		6		Need a wider variety of ingredients for flavor, as a cook I hear complaints all the time about food not having any flavor.

## Footnotes

a. Cardinal number, for counting

d. Sites: 5, Camp Geiger, NC; 6, Camp Geiger, NC



Table C-4. Verbatim Recommendations for Changes to Recipe Cards: U.S. Navy

No.	<sup>a</sup> Site	<sup>e</sup> Comment
1	3	Print cards on plastic or laminate & print amount per 100 of main ingredients in index.
2	3	To allow cooks on watch to send you recipes from our local area and have you implicate them in the next change.
3	3	Make more ethnic recipes
4	3	Breakdowns for specific amounts to be prepared
5	3	I would like to see a curry chicken & curry goat recipe. There needs to be more black style recipes out.
6	3	A picture of each of the following products on the cards.
7	3	Combine more cards together
8	3	Hard paper laminate
9	3	Laminate all cards, should have a card stand- so you can see it while working. Also need more low fat & vegetarian meals.
10	3	We should be able to use more seasonings and be allowed to experiment
11	3	Too many vegetable cards are similar in content
12	7	Make more step by step
13	7	Do not have card the same color sandwiches, vegetables (green) egg, soup (yellow)
14	7	Request to add lb's per hundred to the "index of recipes" next to the appropriate recipe for easy reference.
15	7	Make a recipe book.
16	7	Rolodex for recipe cards would be nice. Also to have them pre laminated.
17	7	Have space on cards for recipe conversion, so not constantly having to use more and more paper.

Table C-4. U.S. Navy (Continued)

No.	<sup>a</sup> Site	<sup>e</sup> Comment
18	7	1. Check steps to ensure proper sequences 2. Check cards not all cards will break down using standard formula
19	7	Should include field/special feeding options.
20	7	Include time it takes to prepare a product as well as cook it include fat grams as well as calories per serving.
21	7	Use hard plastic to cover recipe cards
22	7	Ingredients, time to cook
23	7	They should be made with heavier paper and laminated.
24	7	Increase the number of ethnic dishes
25	7	Delete them
26	7	Add additional items such as: ranch dressing, and change sweet & sour pork to fried pork, etc.
27	7	Too much paper work!! need to get computers for your cards & conversions. I'm doing conversions over 13,000 a meal. It's too much paper work!
28	7	Make cards plastic and recycle
29	7	Alot of recipe cards are not even needed, because the product is never used.
30	8	When a change is made to cards a whole new set should be distributed
31	8	Laminate recipe cards to keep them in better condition
32	8	Please change the steps- by eliminating the unnecessary ones.
33	8	Must note portion size- lost in preparation.
34	8	Each card should be laminated
35	8	Separate section for beef, fish, chicken.

Table C-4. U.S. Navy (Continued)

No.	<sup>a</sup> Site	<sup>e</sup> Comment
36	9	Increase portion size. Have cooking temps for convection ovens not conventional. Have cards plastic coated from print shop.
37	9	Better paper to put them on.
38	15	Cards should have a plastic cover or laminate on them. This would protect against spills.
39	15	If they came in plastic or plastic coated, they would last much longer.
40	15	Should be in alphabetical order so that they are easier to find instead of using the index and wasting valuable manpower/time!
41	15	Should have tabs on cards so they are easier to find and pull out.
42	15	More ethnic; regional recipes
43	15	More healthful meals should be added. Also more fancy dishes should be added that aren't too diff or time consuming.
44	16	Recipe cards often become bent and ripped due to excessive use. Should have computer generated conversions. When you want a recipe all you would have to do is print one out
45	16	They should be tougher- once they get wet they tear very easy!
46	16	Add seasonings to the recipes and products. Add more baked foods- take out the deep fat food or at least cut back.
47	16	Add new recipes that are low-fat & more popular recipes!
48	16	Need more spices
49	16	Add soul food
50	16	Computer disk should be used instead of daily recipe cards.

## Footnotes

a. Cardinal number, for counting

e. 3, Groton Submarine Base, CT; 7, Great Lakes Naval Station, IL; 8, Annapolis Naval Station, MD; 9, USS Briscoe (Destroyer); 15, USS George Washington (Aircraft Carrier)



**Appendix D. Verbatim Responses to Questions 13, 14 and 15,  
Covering Respectively, Problem Recipes, Recipes That  
Should Be Added and Recipes That Should Be Dropped.**

**TABLE D-1 QUESTION 13.** List as many as six (6) recipes you are **having problems with now.**

<b>FOOD ITEM</b>	<b>REASON</b>
3 Bean salad	Not liked by patrons
All creamed soups	Substitute chicken base instead of using salt.
All soupy items	Not enough seasoning
Any type roast	Insufficient yield
Bacon grilled	It's all fat
Baked chicken casserole	Not enough yield
Baked fish	Added butter increases fat content
Baked fish	Cheap portions of fish
Baked franks and sauerkraut	Not liked by patrons
Baked ham, macaroni, tomato	Not enough flavor
Baked ham, macaroni, tomato	Not good if card is followed
Baked ham, macaroni, tomato	Not liked by patrons
Baked ham, macaroni, tomato	Not liked by patrons
Baked ham, macaroni, tomato	Not liked by patrons
Baked ham, macaroni, tomato	Tastes really awful
Baked ham, macaroni, tomato	Patrons don't eat them
BBQ beef cubes	Instructions confusing; too much BBQ sauce
BBQ beef cubes	Insufficient yield
BBQ beef cubes	Not enough yield
BBQ beef cubes	Too many portions of sauce
BBQ chicken	Sauce is not tangy or hot enough
BBQ pork sandwich	Too bland
BBQ sauce	Not proper amounts
BBQ sauce	There isn't any brown sugar on the recipe card.
BBQ sauce	Too much vinegar
BBQ sauce	Using tomato paste
BBQ spareribs	BBQ sauce not as good as one listed in "O" section
BBQ spareribs	The sauce is too strong
Bean soup	Too salty when using entire amount of ham based on AFRS.
Beef and corn pie	How much water?After the roux is prepared?
Beef and corn pie	Does not specify which to put in the middle ham/grnd. beef
Beef and corn pie	Serving size
Beef and corn pie	Servings off
Beef and corn pie	Time consuming; insufficient yield
Beef and corn pie	Too hard to make
Beef and corn pie	Too time consuming
Beef and corn pie	Yield not sufficient
Beef and corn pie	Not liked by patrons
Beef steaks	Cooks away- does not yield enough
Beef stew	More ingredients
Beets	It's never eaten- waste of money
Beets	Never eaten
Beets	Not liked by patrons

**TABLE D-1** Continued

<b>FOOD ITEM</b>	<b>REASON</b>
Beets	Not liked by patrons
Beets	Not liked by patrons
Beets	Not liked by patrons
Beets	Not liked by patrons
Beets	Not liked by patrons
Beets	Should be taken out of supply system
Boiled cabbage	Not liked by patrons
Braised beef	Insufficient yield
Braised liver & onions	Not liked by patrons
Braised liver & onions	Should add bacon to recipe for flavor bake for longer time
Brown gravy	Not enough flavor
Brown gravy	The proportion of flour to shortening is off.
Brown gravy	Too bland
Brown gravy	Too much base
Brown gravy	Use butter for roux
Cabbage rolls	Noone eats
Cabbage rolls	Very unpopular
Canned chili con carne	Bad flavor
Carrot & raisin salad	Not liked by patrons
Carrot & raisin salad	Not liked by patrons
Catfish	Flour and cornmeal mixture
Catfish	Insufficient yield
Celery, apples and walnut salad	Not liked by patrons
Celery, apples and walnut salad	Not liked by patrons
Cheese sauce	Not actual portion
Cheese sauce	Portions not actual
Cheese sauce	Should be dropped
Cheese sauce	Taste terrible
Chicken	We have it too much
Chicken caccatore	Not liked by patrons
Chicken fried steak	Looks terrible
Chicken gravy	Too much base
Chicken pot pie	Too many steps
Chicken vegetable soup	Chicken doesn't cook right
Chicken vegetable soup	If follow the card goes against every sanitation rule in 421
Chicken vegetable soup	If you follow recipe card, could lead to food poisoning
Chicken vegetable soup	Rice cooking with chicken
Chili conquistador	Unattractive product and long prep time
Chili conquistador	Not liked by patrons
Chili macaroni	Not enough chili
Chili macaroni	Poorly seasoned
Chili macaroni	Water level, tomato paste, and seasoning
Chopstick tuna	Doesn't look appealing

**TABLE D-1 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Chuck wagon stew	Not liked by patrons
Club spinach	Not liked by patrons
Cookies	Servings need to be larger
Cookies	Not enough butter- they are dry and hard.
Corned beef	Not liked by patrons
Cottage fried potatoes	Not enough taste
Cream gravy	Patrons don't eat them
Creamed beef	Delete onions add Worcestershire sauce
Creamed beef	Lacks flavor-would suggest garlic,beef base,soy sauce,etc...
Creamed beef	Never comes out right; mostly too thick
Creamed beef	Not enough seasoning
Creamed beef	Old flour
Creamed beef	Old flour
Creamed beef	Roux is incorrectly made
Creamed beef	Take out soup/gravy base
Creamed beef	Too bland
Creamed beef	Too bland
Creamed beef	Too bland
Creamed beef	Too many ingredients
Creamed corn	Gross with soggy crackers
Crisp toffee cookie	Way to hard
Dinner rolls	More guidance on proofing & rolling
Dutch apple cake	Not the right apples in stock
Egg fu yong	Needs more flavor
Franks	Should be 20 lb per hundred because of 2 dogs per person
Fried cabbage	Misunderstanding on the way the cabbage is cut
Fried chicken	Need more seasonings
Fried chicken	Not enough seasoning
Fried okra	Poor yields- makes a mess
Fried rabbit	Low acceptability
Fried rabbit	Not liked by patrons
Fried rabbit	Not liked by patrons
Fried rice	Insufficient yield
Gravy	Adding the stock to the stock to the roux
Gravy	Suggest butter instead of shortening- would add flavor
Gravy	Too much fat
Greens	Simmer 2-3 hours instead of 30 minutes.
Halibut steak	Insufficient yield
Ham	Weight loss after cooking, doesn't provide appropriate yield!
Ham	Not liked by patrons
Ham	Not liked by patrons
Hamburg stroganoff	Not liked by patrons
Homefried potatoes	Not enough spices



**TABLE D-1** Continued

<b>FOOD ITEM</b>	<b>REASON</b>
Hungarian goulash	Not liked by patrons
Italian pasta salad	Calls for salami- ruins the meal
Knockworst & sauerkraut	Do not need patrons don't know diff. between dogs and them
Lasagna	Add more beef to increase yield
Lasagna	Insufficient yield
Lasagna	Insufficient yield
Lasagna	Insufficient yield
Lasagna	Insufficient yield
Lasagna	Insufficient yield
Lasagna	Insufficient yield
Lasagna	Insufficient yield
Lasagna	Insufficient yield
Lasagna	Needs more meat!
Lasagna	Never comes right
Lasagna	Never yields enough
Lasagna	Not enough cottage cheese for filling
Lasagna	Not liked by patrons
Lasagna	Not liked by patrons
Lasagna	Prep nite before, set overnite in fridge, then cook next day
Lasagna	Ready to eat
Lasagna	Ready to eat
Lasagna	Recipe yield- less than projected
Lasagna	Time consuming
Lemon cookies	Lemon flavoring is not sufficient
Lemon drop & slice cookie	Card doesn't give enough information
Lime cilantro sole	Recipe cards
Liver	Do away with only 3% acceptance factor
Liver	Not liked by patrons
Liver	Not liked by patrons
Liver	Patrons don't eat them
Liver	Poor acceptance
Liver	Waste too much because nobody eats it
Liver & onions	Not liked by patrons
Liver & onions	Not liked by patrons
Liver & onions	Not liked by patrons
Liver & onions	Not liked by patrons
Liver & onions	Soldiers won't eat
Liver fiesta	No one eats it
Liver fiesta	No one likes it- looks bad
Liver fiesta	Not liked by patrons
Liver fiesta	Not popular and not healthy
Liver fiesta	Too many ingredients
Macaroni & cheese	Not enough salt or pepper (blah)

**TABLE D-1** Continued

<b>FOOD ITEM</b>	<b>REASON</b>
Macaroni & cheese	Too many onions
Macaroni & cheese	Too much cheese
Macaroni & cheese	Flour & butter ratio
Macaroni & cheese	Flour and butter ratio
Macaroni & cheese	Flour and butter ratio
Mashed potatoes	Insufficient yield
Mashed potatoes	NFD reconstituted
Meatball stroganoff	Not liked by patrons
Meatloaf	Insufficient yield
Meatloaf	Insufficient yield
Meatloaf	Insufficient yield
Meatloaf	Insufficient yield, too much fat.
Meatloaf	Not liked by patrons
Meatloaf	Not liked by patrons
Meatloaf	Should be dropped
Meatloaf	should be prepared
Meatloaf	Too much liquid
Mexican pork chops	Not enough sauce
Mongolian BBQ	No comment
Mustard greens	Not liked by patrons
Mustard sauce	Patrons don't eat them
Nachos	Add ground beef
Newport fried chicken	Long prep time
Oatmeal cookies	If done by card too flat/thin
Oatmeal cookies	Too much water
Omelets	Yield is too small if prepared by recipe
Oven roast	Doesn't account for shrinkage & waste
Pasta	Insufficient yield
Pasta	Needs variety of sauces
Pea soup	Not preferred
Peach cobbler	Navy peach pie filling is gross!
Peach cobbler	Not liked by patrons
Peanut butter & jelly	Doesn't call for enough jelly
Pepper pot soup	The step that says add roux to water
Pepper steak	Insufficient yield
Pepper steak	Is cooked better in copper rather than oven
Pepper steak	Needs more seasoning
Pepper steak	Too much work
Pepper steak	Too salty
Pepper steak	Vegetables are over cooked if you follow the recipe card
Pie crust	If you aren't careful it will not have the right consistency
Pie crust	Not enough water
Pie crust	Too doughy

**TABLE D-1 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Pie crust	Don't roll out good
Pizza	Insufficient yield
Pizza dough	There's not enough for 100 servings
Pork adobo	Not a good product to use- it's hard to reheat
Pork chapula	Doesn't look appealing
Pork chops	Insufficient yield
Pork chops	Too dry
Pork ham	Patrons don't eat them
Potato bar	Too costly
Potato salad	Not enough mustard
Potato salad	Too bland
Potato salad	Too many onions
Potatoes	Insufficient yield
Potatoes	Most are the same
Puree mongol soup	Doesn't look appealing
Rabbit	Too costly
Rainbow pie	Lemon juice should not be added
Raisin sauce	Not liked by patrons
Refrig. cookies	Patrons don't eat them
Ribeye roll	Too costly
Rice	Diff. type
Roast beef	Card does not leave enough cooking time to be done.
Roast beef	Need to cover midway through cooking
Roast beef	Weight loss after cooking, doesn't provide appropriate yield!
Roast pork	Should use more seasonings flavor very bland
Roast turkey	Doesn't account for shrinkage & waste
Salad bar	Need work, simplify
Salisbury steak	Serving size
Salisbury steak	Serving size
Salisbury steak	Too small after cooking
Salisbury steak	Yield incorrect
Salmon loaf	Low acceptability
Salmon loaf	Not liked by patrons
Savory baked chicken	Too much oil
Savory bread dressing	Calls for too much water
Savory bread dressing	Too much liquid
Savory bread dressing	Too much water in recipe
Savory bread dressing	Use cold water - not hot
Scalloped fried potatoes	Needs more flavor
Seafood newburg	Bland awful tasting- crew hates it
Seafood newburg	Low acceptability
Seafood newburg	Not good if card is followed
Seafood newburg	Not liked by patrons

**TABLE D-1 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Seafood newburg	Scallops are not easy to come by
Seafood newburg	Too bland
Short bread cookies	Not enough flour
Short bread cookies	Not liked by patrons
Short bread cookies	Patrons don't eat them
Shrimp jumbalaya	Not liked by patrons
Shrimp jumbalaya	Not liked by patrons
Shrimp scampi	Totally needs to be changed
Simmered dry beans	Too bland
Sloppy joe	Insufficient yield
Sloppy joe	Insufficient yield
Sloppy joe	Pounds of meat per 100
Southern style greens	Too plain
Southern style greens	Too plain
Southern style greens	Too plain
Spaghetti	Beef is inaccurate
Spaghetti meatsauce	Not enough spices-more basil & oregano
Spaghetti sauce	Not enough garlic
Spaghetti sauce	Should have with meatless sauce
Spaghetti sauce	Tastes too tomatoey- needs more spice
Spaghetti sauce	The tomatoes are canned
Spaghetti sauce	Too bland
Spaghetti sauce	Too thick
Spanish beef patties	Not liked by patrons
Spanish beef patties	Waste of time no one eats it
Spiced beef	Not liked by patrons
Spinach cheese calzone	Recipe cards
Spinach lasagna	Cottage cheese is too runny, need to use ricotta
Spinach lasagna	Needs more nutmeg
Spinach lasagna	Not liked by patrons
Squash	Not liked by patrons
Stews	Insufficient yield
Stuffed beef rolls	Need more beef than recipe calls for
Stuffed cabbage	Not liked by patrons
Stuffed cabbage	Not liked by patrons
Stuffed cabbage	Soldiers don't like this product
Stuffed cabbage	Time consuming
Stuffed cabbage	Time consuming
Stuffed green peppers	Insufficient yield
Stuffed green peppers	No eye appeal
Stuffed green peppers	Not liked by patrons
Stuffed green peppers	Very unpopular
Swedish meatballs	Time consuming

**TABLE D-1** Continued

<b>FOOD ITEM</b>	<b>REASON</b>
Swedish meatballs	Yield not sufficient
Sweet & sour pork	Barely anyone eats it
Sweet & sour pork	Does not state how to cut peppers
Sweet & sour pork	Insufficient yield
Sweet & sour pork	Not liked by patrons
Sweet & sour pork	Pork should be fried like chinese rest.
Sweet & sour pork	Too bland
Sweet & sour pork	Too soggy
Sweet dough	Depends on which brand of mix
Sweet dough	Too heavy
Sweet dough	Way too heavy
Sweet potato pie	Not enough spices
Syrian beef stew	Not liked by patrons
Szechwan beef	Recipe cards
Tacos	Small amount of refried beans would enhance
Tamale pie	Recipe not liked
Three bean soup	Not liked by patrons
Tuna & noodles	Waste too much because nobody eats it
Turkey	Need to cover midway through cooking
Turkey	Weight loss after cook - doesn't provide appropriate yield!
Turkey ala king	Flavor for seasoning
Turkey ala king	Insufficient yields
Turkey ala king	Too much salt; yield not per 100
Turkey cutlets	Turkey rolls break apart too easily
Turkey loaf	Falls apart
Turkey loaf	Ground turkey hard to work with
Turkey loaf	Turkey ground too fine
Turkey loaf	Meat is too soft
Turkey nuggets	Only a few people eat it
Turkey nuggets	Time consuming
Turkey nuggets	Time consuming
Turkey nuggets	Too small portion
Turkey peach pita	Recipe cards
Turkey tetrazzini	Using raw turkey should it be boiled or should it be diced?
Jagersnitzzel	Very unpopular
Vanilla cream pie	Too salty
Yakisoba	Not as tasteful as old recipe
Yakisoba	Even by adding noodles it still comes up short

**TABLE D-2** QUESTION 14. List as many as six (6) recipes that you feel should be **added** to the recipe file.

FOOD ITEM	REASON
All butter crossiant	High acceptability
Anything cajun	No comment
Banana bread	Tastes good
Banana pudding	No comment
Banana pudding	Outstanding
Banana pudding	Outstanding
BBQ pork sandwich	Using pork loin boneless
Beans & franks	No comment
Beans & franks	No comment
Beans & franks	Good
Beans & franks	Crew likes it
Beef and broccoli	No comment
Beef cordon bleu	No comment
Beef curry	No comment
Beef porcupine	Not liked by patrons
Beef rib	Pork ribs are not enjoyed by everyone
Beef sausages	Everybody doesn't eat pork
Beef tips and sour cream	Excellent, tender and tasty
Black beans with rice	All spanish dishes are mexican
Boiled lobster	Its good
Boiled lobster	Main line item
Breakfast pastry	Easy and nutritious
Buffalo wings	It's new & different
Bulgogi (Korean BBQ beef)	Delicious
Bulgogi (Korean BBQ beef)	Soldiers are used to eating this from abroad
Bulgogi (Korean BBQ beef)	Soldiers love it
Bulgogi (Korean BBQ beef)	The patrons love it
Bulgogi (Korean BBQ beef)	The patrons love it
Bulgogi (Korean BBQ beef)	Very popular w/ soldiers from Korea
Butterflake rolls	Regional request
Carrot cake	Not the box mix
Cheese ball	Outstanding
Cheese ball	Outstanding
Cheese cake	Liked by all
Cheese hash browns	Adds variety
Chicken adobo	For variety
Chicken and broccoli	No comment
Chicken and dumplings	It's new & different
Chicken curry dishes	Different and ethnic
Chicken fiesta	Good
Chicken fingers	It's new & different
Chicken fingers	Liked by all
Chicken fried beef patties	No comment

**TABLE D-2 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Chicken parmesan	Good;sufficient yield
Chicken parmesan	No comment
Chicken parmesan	No comment
Chicken pot pie	It's good and people like it
Chicken pot pie	Tastes good
Chicken yakiteri	No comment
Chili con carne	More spices
Chili con carne	More spices
Chili macaroni	Need more ingredients added
Chitterlings	No comment
Chocolate chip pancakes	Tastes good
Chop suey	A favorite
Coblers	No comment
Corned beef	Not liked by patrons
Cream of broccoli cheese soups	Excellent many prefer to main entree
Curried chicken	Adds some caribbean flavor
Curried chicken	Culture food
Curried chicken	Ethnic reasons
Curried goat	Adds some caribbean flavor
Curried goat	Culture food
Deep fat fried fish	Breading with cornmeal (corn bread mix)
Diff. types of chili	More selections
Empanadas	Acceptable item in panama
Ethnic	No comment
Ethnic	No comment
Fajitas	Variety
French coconut pie	They taste good
Fresh chicken breast sandwich	No comment
Fresh stir fry	No comment
Fried catfish	Would be liked by patrons
Fried cucumbers	They taste good
Fried dumplings	Jamaican culture food
Fried plantains	Acceptable item in panama
Fried rice	Needs more flavor and ingredients
Gazspacho	Cold soup for warm days
Grilled chicken breast	Low fat choice
Grilled hamburger/cheese burger	Making patties using ground beef bulk
Grilled rubeen sandwich	Fast food item
Ground beef casserole	Have made it, patrons like it
Gyros	Adds variety
Ham hocks for seasoning	Many cooks don't know how to cook
Hamburger dip	Brunch on Sunday
Indian pudding	Regional request

**TABLE D-2 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Less fattening desserts	For healthier patrons
Lomein	Delicious
Macaroni & cheese	No comment
Meatless spaghetti	Healthy, tasty and easy to fix
Meatloaf	No comment
Mexican enchiladas	Popular choice
Mongolian BBQ	Works great on my ship
More ethnic	No comment
More ethnic	No comment
More ground turkey	No comment
More italian food	Needs more variety
More low calorie foods	No comment
More salads	For healthier patrons
More sandwiches	Menu's can be on the light side
More sauces for pasta	Most variety of entree to offer
More variety of seafood	Needs more variety
Mozzarella sticks	Adds variety
Need more food with spices	No comment
Oyster stew	Oysters are in the system
Pasta	Well liked, requested item
Pasta bar	All pastas are very popular- they are very healthy too!
Pasta dishes	More variety needed
Peas and rice	Ethnic reasons
Perogies	Ethnic
Perogies	Ethnic food & quick and easy to make
Quiche	Short prep time
Ramen noodles	The patrons love it
Ranch dressing	Desirable by most patrons
Real sweet & sour pork	Enhance the product
Real veal	Home cooking
Red beans w/ rice	All Spanish dishes are Mexican
Red rice	Good and nutritious
Riggatoni	Need variety with pastas
Rum cake	Should I explain?
Salad dressings	More variety of salad dressings
Salmon cakes	Would be liked by patrons
Salt mackereal	Culture food
Sandwiches (club)	A favorite
Sausage,gravy and biscuits	Crew loves it
Sausage,gravy and biscuits	Tastes good
Seafood chowder	Regional request
Sheppard's pie	Everyone likes it.
Sheppard's pie	It tastes good



**TABLE D-2 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Shrimp cocktail	Change of pace
Shrimp etouffee	No comment
Shrimp gumbo	Very popular dish
Sloppy joe	Good snack line item
Steak & lobster	Birthday meals
steak basted in beer	Home cooking
Steaks	A favorite
Stir-fry	Healthy
Stuffed green peppers	Not liked by patrons
Sweet & sour chicken	Different
Sweet potato crunch	No comment
Sweet potato crunch	Taste really good crew loves it
Sweet potato crunch	Very good recipe
T-bone steak	No comment
Tacos	Something Mexican
Tomato and basil risotto	Healthy, tasty and easy to fix
Tortilla soup	Healthy, tasty and easy to fix
Turkey nuggets	It's new & different
Twice baked potato	Much greater acceptability
Vegetable burgers	No comment
Vegetarian recipes	More diners are eating vegetarian
West indian dishes	No comment
Wine	A culinary delight out in the field!
Yellow rice w/ chicken	All Spanish dishes are Mexican

**TABLE D-3 QUESTION 15.** List as many as six (6) recipes that you feel should be **dropped** from the recipe file.

FOOD ITEM	REASON
3 bean salad	Patrons don't like it
Asparagus	lots of leftovers-
Baked chicken	Not enough flavor
Baked chicken	Too much time
Baked ham,macaroni,tomato macaroni salad	No comment
Baked ham,macaroni,tomato macaroni salad	Not liked by patrons
Baked tuna and noodles	No comment
BBQ beef cubes	No comment
BBQ beef cubes	No comment
Beef and corn pie	No comment
Beef and corn pie	Patrons don't like it
Beef and corn pie	Waste of money not acceptable items
Beef and corn pie	Takes too much time
Beef and corn pie	Low acceptability %
Beef pin wheels	Not appealing
Beef pin wheels	Not popular, too time consuming
Beef pin wheels	Too much labor for a product
Beef porcupine	Has too much rice not popular
Beef porcupine	No comment
Beef porcupine	Time consuming
Beef pot pie	Looks real cheap
Beef strognoff	Patrons don't like it
Beef turnovers	Not liked by patrons
Beef yakisoba	Too much spaghetti and not enough meat
Beets	Never eaten waste of money
Beets	No comment
Beets	No comment
Beets	Soldiers don't eat
Beets	Soldiers don't eat
Beets	Soldiers don't eat
Boston baked beans	No comment
Braised ribs	Soldiers don't eat
Bread pudding	Low acceptability %
Brussel sprout combo	It just sits on the line
Cabbage rolls	Not appealing
Carrot & raisin salad	Not liked by patrons
Catfish	Soldiers don't eat
Chicken ala king	Not appealing
Chicken ala king	Patrons don't like it
Chicken ala king	Too much wasted
Chicken cordon bleu	Too time consuming!!
Chicken fried beef patties	Hard to keep coating in tack
Chicken fried beef patties	They only get one

**TABLE D-3 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Chicken fried steak	Too time consuming!!
Chicken vegetable soup	No comment
Chicken vegetable soup	Rice cooks with raw chix
Chicken vegetable soup	Too bland
Chicken vegetable soup	Not appealing
Chicken vegetable soup	Poor appearance
Chicken vegetable soup	Soldiers don't eat
Chili con carne	Hard to reheat and nobody eats it
Chili con carne	Tastes awful
Chili conquistador	No comment
Chili conquistador	Patrons don't like it
Chili macaroni	No comment
Chili macaroni	Too much time
Chili macaroni	Patrons don't like it
Chili macaroni	Soldiers don't eat
Chitterlings	No comment
Chitterlings	Soldiers don't eat
Chitterlings	They stink!
Chitterlings	We serve too much pork
Chopstick tuna	It doesn't taste right
Chuck wagon stew	Appearance is awful
Chuck wagon stew	No comment
Chuck wagon stew	No comment
Chuck wagon stew	Not too many people eat it
Chuck wagon stew	Patrons don't like it
Chuck wagon stew	Poor appearance
Chuck wagon stew	Soldiers don't eat
Chuck wagon stew	Soldiers don't eat
Coconut cream pie	Low acceptability %
Corned beef	No comment
Corned beef	Soldiers don't eat
Cream gravy	Too bland
Creamed beef	My problem
Creamed beef	Never used
Creamed beef	No comment
Creamed beef	Too complicated
Creole summer squash	Low acceptability
Creole squash	Not liked by patrons
Deep fried oysters and clams	Not enough demand too costly
Frankfurter w/cheese & bacon	Patrons don't like it
Fried lamb	Not liked by patrons
Fried okra	No comment
Fried oysters	Have never seen on menu

**TABLE D-3 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Fried potato balls	Too time consuming!!
Fried rabbit	It's never served
Fried rabbit	Low acceptability %
Fried rabbit	No comment
Fried rabbit	No comment
Fried rabbit	No comment
Fried rabbit	Too much time
German potato cakes	No comment
Ham	No comment
Ham	No comment
Ham	Not liked by patrons
Ham	Each marine wants a meal not an appetizer
Ham	Each marine wants a meal not an appetizer
Ham	Low acceptability
Hamburg yakisoba	Too much salt
Hamhocks	No comment
Hungarian goulash	No comment
Hungarian goulash	Patrons don't like it
Italian style lima beans	Not liked by patrons
Knockworst & sauerkraut	No comment
Knockworst & sauerkraut	Soldiers don't eat
Lamb	No comment
Lasagna	Time factor
Liver	Lack of interest
Liver	Lots of leftovers-
Liver	Low acceptability!
Liver	Low acceptance factors
Liver	Low acceptability %
Liver	Low acceptability %
Liver	Low acceptability!
Liver	Never eaten- just thrown away!
Liver	No comment
Liver	No comment
Liver	No comment
Liver	No comment
Liver	Not liked by patrons
Liver	Not liked by patrons
Liver	Patrons don't like it
Liver	Soldiers don't eat
Liver	Soldiers don't eat
Liver	Soldiers don't eat
Liver & onions	No one ever eats this stuff in my chow line!
Liver & onions	Soldiers don't eat

**TABLE D-3 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Liver & onions	Soldiers don't eat
Liver & onions	Soldiers don't eat
Liver & onions	Soldiers don't eat
Liver & onions	Soldiers don't eat
Liver & onions	Soldiers don't eat
Liver fiesta	Doesn't taste good
Liver fiesta	Looks bad- no one likes it
Liver fiesta	Not appealing
Liver fiesta	Not liked by patrons, no eye appeal
Liver fiesta	Not popular, not healthy
Liver fiesta	Patrons don't like it
Liver fiesta	Soldiers don't eat
Macaroni & cheese	Too much of it
Mulgwantany soup	Awful
Mulgwantany soup	Not liked by patrons
Maryland fried chicken	Too time consuming
Meatball items	Too time consuming
Meatballs	Time consuming
Meatloaf	Time consuming
Meatloaf	Too much of a hassle
Minced beef	Looks like dog food
Mixed vegetables	Patrons will only eat when there is no other choice
Monte cristo sandwiches	No comment
Mustard sauce	Soldiers don't eat
Mustard sauce	Soldiers don't eat
Newport fried chicken	Long prep time
Newport fried chicken	Messy and too many steps
Newport fried chicken	No comment
Newport fried chicken	Too many steps
Newport fried chicken	Too time confusing, product always dry or raw
Noodles jefferson	Noodles stick too much
Onions and mushroom quiche	Haven't seen on menu for 8 yrs
Oven roast	Portion size too big to slice at one time.
Peanut butter & jelly	It's stupid
Pigs feet	Soldiers don't eat
Pineapple sauce	Not liked by patrons
Polish sausage	Low acceptability %
Pork adobo	No comment
Pork adobo	Soldiers don't eat
Pork adobo	Soldiers don't eat
Pork chop suey	Nobody eats it
Pork chop suey	Patrons don't like it
Pork chop suey	Soldiers don't eat

**TABLE D-3 Continued**

<b>FOOD ITEM</b>	<b>REASON</b>
Pork chops	No comment
Pork hocks, simmered	Heart attack- waiting to happen
Pork hocks	Too fattening
Potato bar	Too costly
Potato cakes	No comment
Rabbit	Low acceptability
Rabbit	Low acceptability; too costly
Rabbit	Poor rabbit!
Rabbit	Time consuming
Rabbit	Who would eat it?
Rabbit	Who would eat it?
Rabbit	Who would eat it?
Rabbit pie	Soldiers don't eat
Rabbit stew	Crust falls apart
Ribeye roll	Too costly
Roast turkey	Lots of leftovers-
Salisbury steak	No comment
Salmon loaf	No comment
Sauerbraten	Low acceptability
Scalloped ham & macaroni	Too bland
Scrapple	Never used
Seafood newburg	Not good
Southern fried catfish	Not liked by patrons
Spanish beef patties	No comment
Spanish beef patties	Not liked by patrons
Spanish beef patties	Soldiers don't eat
Spicy black fish	No comment
Spinach beef patties	Nobody eats it
Spinach lasagna	Patrons don't like it
Stewed tomatoes	Not liked by patrons
Stuffed baked pork chops	Not liked by patrons
Stuffed cabbage	Waste of food not popular
Stuffed cabbage	Soldiers don't eat
Stuffed cabbage	Soldiers don't eat
Stuffed green peppers	Not liked by patrons
Stuffed green peppers	Soldiers don't eat
Stuffed green peppers	Soldiers don't eat
Stuffed green peppers	Time consuming
Stuffed green peppers	Waste of food not popular
Sweet & sour pork	No comment
Sweet & sour pork	Soldiers don't eat
Swiss steak	Time not worth it
Syrian beef stew	Soldiers don't eat

**TABLE D-3** Continued

<b>FOOD ITEM</b>	<b>REASON</b>
Tamale pie	No comment
Tamale pie	Patrons don't like it
Tamale pie	Soldiers don't eat
Tamale pie	Soldiers don't eat
Tamale pie	Too much wasted
Texas hash	No comment
Texas hash	Soldiers don't eat
Texas hash	Soldiers don't eat
Tuna & noodles	Low acceptability %
Tuna & noodles	No comment
Tuna & noodles	Not liked by patrons
Tuna & noodles	Soldiers don't eat
Tuna & noodles	Soldiers don't eat
Tuna & noodles	Soldiers don't eat
Tuna & noodles	Too bland
Turkey chow mein	Soldiers don't eat
Turkey curry	Looks unappealing
Turkey curry	Not appealing
Turkey loaf	No comment
Turkey sausage	Lots of leftovers-
Vanilla cream pie	Low acceptability %
Veal parmesan	Get cold too quick
Veal steaks	Poor quality of veal steaks
Waldorf salad	Not liked by patrons
Waldorf salad	Time consuming
Waldorf salad	Soldiers don't eat
Yakisoba	Not liked by patrons
Yakisoba	They like it with beef strips





**Appendix E. Verbatim Responses to Question 17:** *In this space, please make any comments you wish about matters not covered in the survey.*

**Table E-1** Verbatim Responses to Additional Comments: U.S. Air Force

No.	a	Site	b	Comment
1		2		Have DPSC get food items of better quality (oven roast, grd beef)
2		12		I feel a greater emphasis on healthy cooking and not emphasis on mass production. healthy cooking is good for all patrons- less fattening desserts in essence is healthy!
3		12		All entry level food service personnel should be allowed to attend graduate food service school
4		12		Properly functioning equipment. menu substitution and ingredient substitutions.
5		12		You will tend to find that most facilities (Air Force) will have a microwave oven for patron use not cooking meals

Footnotes

a. Cardinal number, for counting

b. Sites: 2, Grand Forks AFB, ND; 12, Langley AFB, VA; 14, Kadena AFB, Okinawa; 17, Mountain Home AFB, ID

**Table E-2** Verbatim Responses to Additional Comments: U.S. Army

No.	<sup>a</sup>	Site	<sup>c</sup>	Comment
1		1		Add more Asian-Pacific recipes.
2		1		Today's soldiers are not a meat and potato generation. Need healthy foods. More variety of salads, meatless dishes & more pastas.
3		1		Cooks work too hard- need more help
4		1		Computer generated recipies- we serve too much pork in the dining facility.
5		1		I believe they should add more Latin meals, not just Mexican. The military doesn't have just Mexican it has Puerto Ricans, Panamanians, Dominican, Cubans, etc. and when it comes to Spanish meals they are only pleasing the Mexican palate.
6		1		Its time for a new set of recipes!!!
7		4		I think if we are in another country we should have the cards written in English and the other language.
8		4		We don't have any vegetarian menu items on any army recipe card -we need to have vegetarian meals added to the menu!
9		4		More vegetarian main meals. Also remove chicken skin and excess fat from meat
10		4		Guidelines on cook & prep times for making production schedules
11		4		Guidelines on cooking & prep times for making up production schedules
12		13		There needs to be many more fancy entrees and more ways to cook seafood items.
13		13		When there is a change it should be mandatory that each dining facility management gets the change.
14		13		Need to be more specific on when to add and how much when you use the same ingredient
15		13		Small jacketed kettles and microwaves are needed

Table E-2 Continued

No.	<sup>a</sup>	Site	<sup>c</sup>	Comment
16		13		Replacement parts are almost impossible to get. Some parts you never get.
17		13		Parts are hard to get replaced for equipment
18		13		Need up to date utensils. Also I would like see cooks be able to add spices to recipes.
19		13		I would like more dishes from india; items such as chicken curry or shrimp curry.
20		13		The system should have a computer system to standardize all recipes- then everyone will get updated dishes as soon as they came out.
21		13		Make a recipe card that is waterproof
22		13		The welfare of a cook, no respect
23		13		More input should be given by the FSS, and not disregarded as complaints.
24		13		AFMIS
25		13		We might have the equipment but, it does not always work!

## Footnotes

a. Cardinal number, for counting

c. Sites: 1, FT. Campbell, KY; 4, Camp Zama, Japan; 11, FT. Sherman, Panama; 13, FT. Lee, VA

**Table E-3** Verbatim Responses to Additional Comments: U.S. Marines

No.	a	Site	d	Comment
1		5		Things can run smoother. I think everyone has an opinion and it should be heard. If their comments work we should give them a try.
2		5		Thanks for asking my opinion!
3		5		We need to have a microwave oven in our messhall.
4		5		Store room needs a better way to do break outs of meats and dry products.
5		5		Need changes # of diff. cakes, cookies more often. Fancy pies could be made if pre-made pie crust were available.
6		5		I work on the computer not in the galley
7		6		Recipes should take into account whether or not people actually follow them or not. i.e. labor saving steps
8		6		I love food service
9		6		Could dining facility get measuring cups and more advanced seals
10		6		There are many problems- lack of training, personnel are not properly instructed as often as they should in their MOS
11		6		MEFIMS has put a damper on the use of recipe cards

**Footnotes**

a. Cardinal number, for counting

d. Sites: 5, Camp Geiger, NC; 6, Camp Geiger, NC

**Table E-4** Verbatim Responses to Additional Comments: U.S. Navy

No.	a	Site	e	Comment
1		3		If cooks were able to submit comments on cards of an easier way to prepare a dish, then send a memo to all commands, so everyone is able to benefit from that person's idea.
2		3		Calories should be on the recipe card
3		7		Recipe cards are ok for right now if the cycle menu is fully in force.
4		7		Like any command in the Army it is very hard to find a complete set of cards. We need FSM and a computer for our galley to make printouts of recipes needed.
5		7		There is never any money in the budget for simple things such as a toaster that works. Also the portion size is never large enough. It is hard to accurately predict how much to prepare. Never enough to eat is number one complaint.
6		7		Recipes in AFRS do not provide enough. Also it needs more ethnic variety.
7		7		More vegetarian dishes should be included.
8		7		Print cards on sealed paper such as plastic covered- the cards get very dirty very fast!
9		7		We make 400-4500 baked pastries a day and we have no proof box!
10		8		The Navy is using too many greasy, fried and breaded foods in the AFRS. In order to serve more nutritious meals, I feel the cards need to be modified so more nonfat ingredients are used. Also, seasonings would then need to be adjusted to keep original flavor.
11		8		Quality of meats could be better.
12		9		I think the AFRS is great overall. Increase the portion sizes and we will be able to better feed our soldiers.
13		9		NAVFSSO has more changes to fsm which have altered the work sheet recipe #. This makes it difficult because of all the changes.

Table E-4 Continued

No.	a	Site	e	Comment
14		9		I've been in the navy 20 years and the food tastes the same everyday for "20 years" - it's boring!
15		15		Make it easier to order and receive recipe cards
16		16		I personally feel most of the Navy recipes are rather bland. They should be completely revised! They should be more healthy- They do not reflect today's needs and wants of a health conscious person
17		16		To whom it may concern, AFRS is an outstanding set up of cards- bravo to the genius who came up with the idea
18		16		Today's knowledge of computers should be used- get with the program.
19		16		Need to make time for MS to get hands on training with the equipment.

Footnotes

a. Cardinal number, for counting

e. Sites: 3, Groton Submarine Base, CT; 7, Great Lakes Naval Station, IL; 8, Annapolis Naval Station, MD; 9, USS Briscoe (Destroyer); 15, USS George Washington (Aircraft Carrier)





**Appendix F. Script/Guidelines for Post-Survey Discussion Groups  
and Notes from Army, Marine and Navy Discussion Groups**

## **Part 1. SCRIPT/GUIDELINES FOR POST-SURVEY DISCUSSION GROUPS**

1. Now that you've seen and filled out the questionnaire, what issues concerning the Recipe Service did we *miss asking you about*? Why didn't they ask us about...? Probe for more detail on any topics that arise.
2. Of all the issues concerning use and servicing of the recipe file, whether we asked the question or not, which are most important to you. Suggest recipe issues that *may be* important, if none are mentioned. Example: enough recipes for foods their consumers want on menus.
3. Handling of inquiries, recipe problems, suggestions: these typically go through their local Food Service Office for response and resolution. How well are these handled; how fast do you get a response, etc.?
4. Recipe card changes. Do you get them soon after they are issued? What Change do you now have?
5. Do you *really* follow recipes? Can you get local authorization to make modifications not called for on recipe card to suit local consumer tastes, due to unavailability of an ingredient(s), increase seasoning or spicing, other reasons?
6. What would your reaction be to a computer system in which recipes could be brought up daily on a personal computer and printed out when needed? How familiar are you with PCs (many bases have already computerized the supply/ordering function.)?
7. Do most recipes work *if followed*? Do they get the *yields* stated on the recipe cards?
8. (As time permits) What recipes are you having problems with now? What is the problem?
9. Do you maintain and use a "local" recipe file? What items are in it that are not on current recipe cards?

## **Part 2. Army**

### Post-survey discussion group conducted 17 November 1994 at U.S. Army Quartermaster School, Ft Lee, VA

1. Recipe cards: Recommend plastic coated cards. Increase thickness of paper stock. Miniaturize cards. Why print cards if they can't be touched? Container or box for recipes not provided but needed. Would like to see more pictures. Cards are mishandled in shipment; boxes arrive torn, damaged. Too many cards: of the meat recipes, use 20-25 at most. Specific problem: Beef cannelloni - TISA can't get the pasta.

2. AFMIS system: Some recipes are incomplete, have ingredient omissions, other errors. Who enters data into system?

3. Other comments were received that duplicated those made in other discussion groups. There was little discussion of specific recipe problems or of the questions asked on the survey questionnaire.

### Post-Survey Discussion Group, Ft. Campbell, KY, 20 October 1994

1. The same issues concerning recipe cards and the recipes were brought up here as in other discussion groups.

2. One issue considered most important by those interviewed was the discrepancy between the new REVISION recipe cards and the recipes entered in the AFMIS computer systems. Example: Swedish Meatballs. Compared to the REVISION card, the AFMIS recipe used:

- a. 10 oz. more water (used to reconstitute the NFDMS)
- b. 10 lbs. more ground beef (20% soy). Card does not indicate the ground beef is soy added.
- c. 4 additional eggs
- d. 1 lb. fresh onions instead of 1 lb. 4 oz. dry onions
- e. 10 oz. additional flour
- f. 3 1/2 oz. less soup & gravy base, beef
- g. 14 additional oz shortening
- h. 3/4 tb. additional allspice
- i. about 1 1/4 tsp. more black pepper in egg mixture and about 2 tsp. more in the soup & gravy base mixture
- j. 1 tb additional salt
- k. no bread on ingredient list although step 2 of the instructions indicates the milk mixture is to be poured over the bread and allowed to stand for 15 minutes.

Evidently, the recipe data in AFMIS is an earlier version of the item prior to reformulation work to reduce fat and salt. Of particular concern is the discrepancy in the ground beef amount and the omission of the bread. At Ft. Lee, the cooks said AFMIS records were from Change 2.

### Part 3. Marines

Post-questionnaire discussion groups conducted 3 November 1994.  
at Camp LeJeune, NC. Three sessions were held. Comments are pooled.

#### 1. Computers:

a. Recipes generated by MEFIMS: ingredients left out, conversions wrong. Not taught to use it. Every DH is different in how it uses it. In some DHs, only management uses it. It's problem if the computer goes down.

b. There are computers only in Food Service Office (FSO). They get mixed up with Supply operation.

#### 2. Recipes problems/concerns:

a. General: Use few of 1300 recipes in a 28 day cycle. We make some items 3 times per week. many foods not cooked at all, e.g., beef stroganoff.

b. Follow recipes to a degree.

c. Many recipes are bland.

d. Now using REV. Their FSO keeps them up-to-date.

e. Creamed Ground Beef. With fat reduction, get "floury beef." When there's no rue, there's no flavor.

f. Pork Chop Suey. Specific problem not identified.

g. Salads - too few in file. In the new Marine menu, only 5 are now made, rest bought on contract.

h. Health bar. Not further elaborated.

i. Veal doesn't oven brown.

j. Roasts. Low yield; shrinkage caused by high fat

k. Macaroni salad. Taste mostly like onions (fresh used).

l. Lasagna - not enough cheese mixture

m. Lyonnaise potatoes, cottage fries - problem not identified

n. General: too bland, not enough seasoning.

o. Bone-in rib recipe. Don't get yields. Also difficult to follow card.

#### 3. Yield problems:

a. Spaghetti

b. Rice

c. Farina - 6 lbs. is wrong.

d. Potatoes, mashed

e. Roasts - always short on yield

#### 4. Portion sizes:

a. Do not have 2/3 cup size ladle.

b. Lasagna - get 80, not 100 portions.

#### 5. Menu:

a. Master Menu. Rib eye steak and Steamship Round at same meal not good.

b. In 28 day cycle, see everything enough; 28 day cycle is

## Marine Corps discussion groups (continued)

too short. Too much repetition. Frequency not due to lack of supply; items are on Master menu.

### 6. Ingredients:

- a. Cheddar cheese provided is not good; too sharp
- b. Flour they use doesn't work in recipes
- c. Use 100% ground beef patties, no soy

## Post-survey discussion groups conducted at Camp Geiger, NC, 3 November 1994. Comments are pooled.

1. Seasonings are too low in most entree recipes, etc. Scaling factor for seasonings when feeding 500 or more may need adjustment.
2. Portion sizes (3/4 cup) for vegetables are too much. They do not eat all of the portion. (Plate waste study needed?).
3. A.P./E.P. conversion factor for meats should be considered especially when feeding large numbers. Thawing/trimming fat loss has a drastic effect on edible portion yield.
4. Surface area in various steam jacketed kettles (SJK). If a recipe says "to cover" with water, it depends on what size kettle you are using to determine how much water it takes to cover a product.
5. Most Spaghetti sauce recipes simmer for at least an hour. When using the SJK in most dining facilities, there is a very thin line between simmering and boiling due to the fluctuation of pressure in the steam lines. In many cases the sauces boil which creates excessive evaporation. Therefore, MSG James suggests bringing the water level back up to the original level in the SJK to get the desired yield.
6. Open Vending is going to diminish the consistency of recipe quality. Every vendor will have different products with quality characteristics that vary. This will create recipes that will not taste the same.

#### Part 4. Navy

Discussion Group held at US Navy Submarine Base, Groton, CT, on 28 September 1994

1. Anything left off questionnaire? No response.
2. Recipe card issues.
  - a. Suggest plastic laminated cards to prevent moisture deterioration. Saw the condition of their CH4 cards - all were badly frayed/damaged from being out and in use.
  - b. Size reduce cards and put in spiral bound book to be issued to all cooks
  - c. Never know Change or Revision is out until there is an inspection.
  - d. Deleted items/cards from previous Revisions or Changes are being kept.
  - e. Suggested lbs. of major/key ingredient(s) should be on recipe *index card*. E.g., pot roast would give the lbs. beef required in the recipe.
  - f. Recipes used as a guide most of the time.
3. Specific recipe problems
  - a. Raised donuts - water level too high
  - b. Gravies & sauces too thin - water levels too high/ not enough thickener, result more like au jus.
  - c. Cabbage rolls - not enough sauce, as is true of most items with sauces.
  - d. Fish - portion size increase needed
  - e. Not enough seasoning - recipe not specified, but can increase w/ watch supervisor OK - they end up using more for many items.
  - f. Cooks, esp. those coming from non-American ethnic backgrounds, need pictures of items they have never prepared before. Preferably, they would be an inset on the recipe card itself, not a separate card.
  - g. Yield for oven glow potatoes incorrect.
  - h. They question the source of ingredients used to determine yield. Prime example: pot roast. The raw item they receive from Navy Supply has an excess of cover fat, resulting in less yield than on recipe card.
4. Separate recipe file. They have developed and maintain a loose leaf binder of "local recipes" that they use regularly.
5. Other:
  - a. Cooks that have been on submarine duty claim that many recipes cannot be executed aboard ship because of equipment limitations.
  - b. FSO offered to provide about 50 submarine duty cooks if we require them for the survey. Those surveyed were all from the ashore galley.

**Appendix G. The Armed Forces Recipe Service (AFRS) Questionnaire**





# Armed Forces Recipe Service (AFRS) Questionnaire

Proper Mark



**Instructions.** The U.S. Army Natick RD&E Center has been tasked by DOD to survey food service personnel about AFRS services. Please answer this questionnaire honestly and thoughtfully. *Your responses are confidential and cannot be traced to you.* Your completed questionnaire will not be seen by your Food Service Office, but will be sent directly to Natick where it will be tabulated with others. Natick will then prepare a report of findings and recommended changes for DOD and your Service. Thank you for your help!

1. Indicate your branch of the Armed Services:

☐ Air Force    ☐ Army    ☐ Marine    ☐ Navy    ☐ Contractor

2. What is your grade? If your grade is not listed below and you are not a contractor, mark the oval labeled "Other" and write your grade on the line provided.

☐ E1    ☐ E2    ☐ E3    ☐ E4    ☐ E5    ☐ E6    ☐ E7    ☐ E8    ☐ E9    ☐ Contractor

☐ Other \_\_\_\_\_

3. What is your gender?    ☐ Female    ☐ Male

4. What is your job title (SSI/MOS)? \_\_\_\_\_

5. What is the **highest level** of education you have completed? If your answer is not listed below, mark the oval labeled "Other" and write in the level of education. (Mark only one oval)

☐ High School or Graduate Equivalency (GED)  
☐ Some College Courses  
☐ Two Year College Certificate  
☐ Civilian Culinary School Degree  
☐ Four Year College Degree  
☐ Other \_\_\_\_\_

6. What is the highest level of military culinary/cook's training you have received?(Mark only one oval)

Air Force	Army	Marines	Navy
<input type="radio"/> AFC-3MO31	<input type="radio"/> AIT	<input type="radio"/> BFSC	<input type="radio"/> A School
<input type="radio"/> AFC-3MO71	<input type="radio"/> BNCOC	<input type="radio"/> FSNCO	<input type="radio"/> C School
<input type="radio"/> AFC-3MO91	<input type="radio"/> ANCOC	<input type="radio"/> FSSNCO	
	<input type="radio"/> FSM	<input type="radio"/> SFSC	

Do not write below this line.

ID 


0 1 2 3 4 5 6 7 8 9

SSI 


0 1 2 3 4 5 6 7 8 9

2o. 


0 1 2 3 4 5 6 7 8 9

7a. What REVISION/CHANGE are you now using in your facility ? (Lower lefthand corner of cards) ☐

- ☐ No designation  
☐ CH-1  
☐ CH-2  
☐ CH-3

- ☐ CH-4  
☐ REVISION  
☐ Combination of REVs/CHs  
☐ Do not know

7b. Do you have the separate spiral bound "INDEX OF RECIPES"? ☐ Yes ☐ No

8. Rate the ease or difficulty of the following activities associated with the card file and recipe cards you have used.

Very Difficult	Difficult	Neither Easy Nor Difficult	Easy	Very Easy
1	2	3	4	5

	1	2	3	4	5
a. Finding recipes in file	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Using recipe cards that are printed on both sides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Following recipes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Understanding the wording on cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Replacing cards in file	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Revising/updating file with new cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Requesting a recipe to be added or deleted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Reporting an error in a recipe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Rate the following features of the card file and recipe cards you have used.

Not Enough		Just Right		Too Much
1	2	3	4	5

	1	2	3	4	5
a. Number of recipes in file	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Number of steps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Amount of detail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Seasoning/spicing levels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Fat levels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Salt levels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Suggested portion sizes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Number of ethnic/regional dishes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



10. Using the scale below, rate the following features of AFRS recipe cards.

Very Poor	Poor	Fair	Good	Very Good
1	2	3	4	5

	1	2	3	4	5
a. Dimensions of cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Recipe layout on cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Logical order of steps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Guidelines cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Conversions cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Accuracy of yields	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Usefulness of spiral bound Index of Recipes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Usefulness of index cards (beginning of category)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Color coding of each recipe category	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Use of simplified preparation procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Usefulness of Notes on recipes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Make use of latest ingredients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Make use of latest equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Present physical condition of card file	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. In addition to the above features, list any recommendations you have for changing recipe cards.

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Do not write below this line.

Q11.

0	1	2	3	4	5	6	7	8	9

Q13b

0	1	2	3	4	5	6	7	8	9

Q5

0	1	2	3	4	5	6	7	8	9

Q13a

0	1	2	3	4	5	6	7	8	9

Q14a

0	1	2	3	4	5	6	7	8	9

Q14b

0	1	2	3	4	5	6	7	8	9

12. The following are statements about AFRS and recipe cards. Indicate the extent to which you agree or disagree with each of the statements using the following scale. ☐

Disagree strongly 1	Disagree Moderately 2	Neither Agree Nor Disagree 3	Agree Moderately 4	Agree Strongly 5
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	1	2	3	4	5
a. Generally, AFRS meets our needs in a timely fashion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Our dining facility automatically receives recipe card changes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Recipes reflect the preferences of today's dining facility patrons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. If I submit a Recipe Action Review Sheet to AFRS, I receive a personal response.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. AFRS recipes produce high quality food.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Recipe cards should provide nutritional information to pass on to dining hall patrons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Generally, recipe steps are as simplified as they can be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Recipe cards enable us to utilize all the cooking equipment we have in our facility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. It would be helpful if NSN and /or UPC Codes were given on recipe cards for all ingredients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Whenever we cook any item, we are told to have its recipe card out for reference.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Recipe cards enable us to use the latest labor saving ingredients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. In the lefthand column, list as many as six (6) recipes you are **having problems with now**. In the right hand column, briefly indicate what the problem is; examples: insufficient yield, not liked by patrons, too much of an ingredient(s), etc.

Recipe Name	Nature of Problem
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

14. List as many as six (6) recipes you feel should be **added** to the recipe file.

Recipe Name	Reason
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____



15. List as many as six (6) recipes you feel should be **dropped** from the recipe file.

Recipe Name	Reason
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

16. The following is a list of **kitchen equipment**. Please indicate whether you have them in your kitchen.

	Have	Do Not Have
a. Steam jacketed kettle(s)	<input type="radio"/>	<input type="radio"/>
b. Steamer	<input type="radio"/>	<input type="radio"/>
c. Tilt griddle	<input type="radio"/>	<input type="radio"/>
d. Griddle	<input type="radio"/>	<input type="radio"/>
e. Deep fat fryer	<input type="radio"/>	<input type="radio"/>
f. Conventional oven	<input type="radio"/>	<input type="radio"/>
g. Convection oven	<input type="radio"/>	<input type="radio"/>
h. Broiler	<input type="radio"/>	<input type="radio"/>
i. Microwave oven	<input type="radio"/>	<input type="radio"/>
j. Microwave/convection oven	<input type="radio"/>	<input type="radio"/>

17. In this space, please make any comments you wish about matters not covered in this survey.

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**Thank You!**

Do not write below this line.

Q15a


0 1 2 3 4 5 6 7 8 9

Q15b


0 1 2 3 4 5 6 7 8 9

Q17


0 1 2 3 4 5 6 7 8 9